For Reference

NOT TO BE TAKEN FROM THIS ROOM

Ex libris
universitatis
albertaensis

QUAECUMQUE VERA

THE UNIVERSITY OF ALBERTA

THE RELATIONSHIP BETWEEN INSTRUMENT ASSIGNMENT CATEGORIES AND STUDENT PERSISTENCE IN AN INSTRUMENTAL MUSIC PROGRAM

by

© PETER WITHERLY

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES

IN PARTIAL FULFILMENT

OF THE REQUIREMENTS FOR THE DEGREE

OF MASTER OF EDUCATION

DEPARTMENT OF SECONDARY EDUCATION

EDMONTON, ALBERTA

SPRING, 1971

Thesis
1971
176

UNIVERSITY OF ALBERTA

FACULTY OF GRADUATE STUDIES

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies for acceptance, a thesis entitled "The Relationship Between Instrument Assignment Categories and Student Persistence in an Instrumental Music Program" submitted by Peter Witherly in partial fulfilment of the requirements for the degree of Master of Education.

ABSTRACT

The problem was to determine whether student persistence in an instrumental music program was affected by the extent to which student preference was considered in the instrument assignments. The population comprised students from grades 7 to 12 of the Music Education Laboratory, University of Alberta (MELAB). The research was designed in two parts.

In Part I, the following data were collected from the files of 200 students who joined MELAB in 1963, 1964, and 1965: sex, age, previous musical training, Seashore pitch and tonal memory test scores, instruments chosen, instrument assigned, and persistence. A preliminary investigation found no significant correlation between Seashore tonal memory and persistence; however, a low but positive and significant correlation was found between Seashore pitch and persistence. Subsequent tests for differences among categorical means were therefore adjusted for pitch. The students were classified according to three arbitrarily defined instrument assignment categories. Category A students had received their first choice, category B students had received their second or third choice, and category C students had received an instrument other than one of their choices. No significant difference in mean persistence was found among these assignment

categories, nor were there significant differences found when students were classed by sex, age, or previous training. Significant differences were found when students were classed by the instrument of their first choice or by their assigned instrument family. In both cases, woodwinds had the highest mean persistence. A significant difference was also found when students were classed by assignment category and level of previous training. Category C students with no previous training had a very low mean persistence.

Part II involved interviews with 59 students who were completing their first six months of training. Although students lacked familiarity with the instruments, they thought that they knew enough to make an intelligent choice. Students tended to choose an instrument with which they were familiar, but this was usually not a long standing decision. Although most students indicated that they were happy with their assigned instrument, only 63 per cent were certain that they wanted to continue to study it. Assignment category was significantly related to this decision. The greatest single factor contributing to the fact that 57 per cent of the students changed their original choice was the assigned instrument.

It was concluded that instrument assignment category did affect student persistence in the first few months of training particularly if the student had no previous training. After the first year in the program, however, assignment category had very little effect on continued student persistence.

CONTENTS

LIST OF TABLES.......... vii

CHAPTER I. INTRODUCTION TO THE PROBLEM.......... 1

1. Overview of the Problem in the Literature.......... 1
2. Statement of the Problem.......... 7
3. Purpose of and Need for the Study.......... 9
4. Hypotheses and Questions.......... 10
    Part I: null hypotheses
    Part II: experimental questions
5. Definition of Terms.......... 12
6. General Design of the Study.......... 14
7. Limitations.......... 15
8. Organization of the Remainder of the Study.......... 17

CHAPTER II. RELATED RESEARCH.......... 18

1. Student Choice of Instrument.......... 19
2. Interest and Motivation.......... 20
3. Prediction of Success.......... 24
4. Instrumental Music Dropouts.......... 30
5. Summary of the Related Literature and Research.......... 33

CHAPTER III. DESIGN OF THE STUDY.......... 36

1. Population.......... 36

2. Research Design.................................... 43
    Part I: ex post facto
    Part II: interviews

3. Preliminary Investigation.................................... 56
    problem and hypotheses
    procedure and results

4. Statistical Procedures.................................... 59
    multiple regression
    chi square

CHAPTER IV. ANALYSES AND RESULTS.................... 62

1. Results of Part I.................................... 62
    major hypothesis
    alternative hypotheses
    minor hypotheses
    second-order interaction

2. Results of Part II.................................... 88
    Q(1)
    Q(2)
    Q(3)

CHAPTER V. SUMMARY AND DISCUSSION.................... 125

1. Summary.................................... 125
    problem and design
    findings

2. Conclusions.................................... 133

3. Recommendations.................................... 136

4. Suggestions for Further Research.................... 138

REFERENCES.................................... 140

APPENDIX A: MELAB APPLICATION FORM.................... 144

APPENDIX B: MELAB INTERVIEW FORM.................... 149

APPENDIX C: INTERVIEW SCHEDULE.................... 153

LIST OF TABLES

Table Page

1. Raw correlations of each of five mental and physical measurements with success on three types of musical instruments.... 26

2. MELAB students used in Part I and Part II distributed according to sex, previous training, organization, and assignment category.... 41

3. Number of students completing or not completing their first year of MELAB training.... 47

4. Number of students completing or not completing their second year of MELAB training.... 47

5. Number of students completing or not completing their third year of MELAB training.... 48

6. Number of students completing or not completing their fourth year of MELAB training.... 48

7. Results of step-wise regression showing the advantage of multiple over single regression with persistence as the criterion.... 58

8. Results of step-wise regression showing the advantage of multiple over single regression with restricted persistence as the criterion.... 58

9. Mean persistence and restricted persistence of students classed by instrument assignment category.... 63

10. Mean persistence and restricted persistence of students classed by sex.... 63

11. Mean persistence and restricted persistence of students classed by age at entry into MELAB.... 65

12. Mean persistence and restricted persistence of students classed by previous musical training.................. 67

13. Mean persistence and restricted persistence of students classed by instrument and instrument family of their first choice.................................... 69

14. Mean persistence and restricted persistence of students classed by instrument and instrument family as assigned. 71

15. Mean persistence of students classed by assignment category and sex................................ 73

16. Mean restricted persistence of students classed by assignment category and sex.......................... 74

17. Mean persistence of students classed by assignment category and age at entry into MELAB................. 76

18. Mean restricted persistence of students classed by assignment category and age at entry into MELAB............ 77

19. Mean persistence of students classed by assignment category and three levels of previous musical training... 79

20. Mean restricted persistence of students classed by assignment category and previous training............. 80

21. Mean persistence of students classed by assignment category and instrument family of their choice......... 82

22. Mean restricted persistence of students classed by assignment category and family of their choice......... 83

23. Mean persistence of students classed by assignment category and assigned instrument family............... 85

24. Mean restricted persistence of students classed by assignment category and assigned instrument family.... 86

25. Distribution of students according to new choice compared to original and by instrument familiarity rating......... 93

26. Distribution of students according to their instrument familiarity rating and whether or not they felt prepared to make their original choice. 93

27. Distribution of students according to their new choice of instrument as compared to their original choice and whether or not they felt prepared to make that choice. . . . 95

28. Distribution of students according to their instrument assignment category and whether or not they felt prepared to make their original choice. 95

29. Distribution of students according to their new choice as compared to their original choice and the length of time before coming to MELAB that they had made that choice. 98

30. Distribution of students' answers to Question 5 according to assigned instrument and instrument assignment category. 103

31. Distribution of the answer to Question 5 according to assigned instrument families. 104

32. Distribution by assigned instrument of the responses to Question 6. 106

33. Responses to Question 6 distributed according to assignment category. 109

34. Distribution by instrument assignment category of student response to Question 7. 112

35. Distribution of student response to Question 7 classed by assigned instrument families. 112

36. Distribution according to assigned instrument family of responses to Question 8. 114

37. Responses to Question 8 distributed according to assignment category. 118

38. Distribution by instrument assignment category of the new first choice compared with the assigned instrument. . 121

39. Distribution by assignment category of the first choice compared to the original. 121

40. Distribution of B and C category students according to their new choice compared to their original choice and assigned instrument. 123

41. Distribution according to assignment category of the new choice compared to the original choice or assigned instrument. 123

CHAPTER I

INTRODUCTION TO THE PROBLEM

1. OVERVIEW OF THE PROBLEM IN THE LITERATURE

With each new school term, the formation of beginning band and orchestra classes requires that the instrumental music teacher assume the responsibility of assigning the school-owned instruments. Each student must receive an instrument for which he has at least a minimum degree of aptitude and at the same time a desire to learn. The resultant combination of instruments must be adequately balanced if interesting and meaningful music is to be performed. The ultimate success or failure of a program may be determined by the instrument assignments made at this time. At least one eminent music educator, Robert House, thought that "if the right choice could be made in all instances, the present difficulties of instrumental directors would largely evaporate" (House, 1965, p. 66).

The problem of matching students and instruments is very complex. Instrument assignments are usually made on the basis of the following considerations:

(1) student choice

(2) tests of musical ability

(3) assessment of student temperament and personality

(4) the physical characteristics of the student, and

(5) needs of the organization.

Sometimes, each of the above considerations may suggest a different instrument. The inexperienced teacher will probably turn for guidance to books on developing an instrumental music program.

In most early textbooks on instrumental music education, considerable space was devoted to the instrument assignment problem. One of these, Getting Results with School Bands by Gerald Prescott and Lawrence Chidester (1938), suggested that instrument assignment should be preceded by a demonstration of each instrument.

> As a result of instrumental demonstrations pupils will choose an instrument they wish to play. Many of these decisions will have to be modified by the band director because the instrument chosen does not fit the physical, mental, or emotional make-up of the particular child (Prescott & Chidester, 1938, p. 33).

A list of desirable characteristics were provided as the criteria for modification of those decisions. The physical characteristics included: for cornet players, medium sized teeth and a jaw that is not too pointed; for trombone players, lips that are of average thickness and teeth that are not too short; and for drummers, good muscular reaction. The characteristics of personality and temperament included: for flute, oboe, bassoon, and horn, possession of a natural liking for chamber music; for cornet, natural leadership ability; for trombone,

a rough and ready attitude; and for drummers, a noisy, high strung personality. Prescott and Chidester (1938, p. 33) stressed that in following these characteristics "... the teacher should consider primarily the welfare of the pupil; he should not consider the immediate needs of his organization," a statement curiously inconsistent with their explanation in a previous chapter that students should be persuaded to select an instrument which the organization needs.

Theodore F. Norman in Instrumental Music in the Public Schools, another early textbook, took a very similar stand.

> While it must be admitted that examinations given to children to determine the type of instrument to which they are best adapted are at present somewhat crude, still they will oftentimes avoid placing in the hands of a student an instrument to which he is wholly unsuited both temperamentally and physically. Many students are pitifully handicapped from the start due to lack of proper guidance in the selection of an instrument. Since the choice of the proper instrument may possibly determine success or failure, the instructor's recommendations should be very carefully made (Norman, 1939, p. 49).

Norman did not explain how the student's temperament was to be judged, nor did he explain which temperament suits each instrument. Like Prescott and Chidester, however, he listed the physical characteristics desirable for the different instruments. Some of these were: for strings, a supple left hand; for woodwinds, even lower teeth, and lips that are not too thick or flabby; for brass, lips set well against even teeth; for lower brass, a strong square jaw; and for percussion, supple and flexible wrists (Norman, 1939, pp. 49-51). Since Norman

maintained that a balanced instrumentation is of prime importance, he suggested that the teacher should assign instruments mainly on the basis of the previously described characteristics and the needs of the organization. He considered the student's choice to be of secondary importance since good teachers

> . . . realize that a boy frequently judges the value of a musical instrument by its noise-making qualities, that quite often a girl has decided opinions about the respectability of certain instruments. As a matter of fact, youngsters are happiest playing those instruments for which they are best suited physically (Norman, 1939, p. 52).

This "fact," however, was not documented by Norman.

Another early textbook, written by Mark Hindsley in 1940, suggested the use of aptitude tests and personal interviews and, like the books already cited, described the physical attributes deemed necessary for success on each instrument. Despite these preliminaries, however, Hindsley (1940, p. 17) depends almost entirely on a "test on tone production" for the proper assignment of instruments.

Sylvan D. Ward, also writing in 1940, suggested that most students should be started on the basic instruments--clarinet, trumpet, or violin--and later transfered to other instruments to balance the instrumentation. "If the director is doubtful as to what might be the best for the particular case it is usually well to give the instrument requested and suggest a transfer to another instrument" (Ward, 1940, p. 16).

The title of a text written by Frances Andrews and Joseph Leeder in 1953--Guiding Junior-High-School Pupils in Music Experiences--reflects a change in attitude toward criteria for instrument assignment. Since the authors felt that too much emphasis was generally placed on physical characteristics, they did not include the usual list of physical attributes. Instead, student interest was advanced as the main criterion for acceptance into the instrumental program.

> Pupils who sincerely desire to play may go farther with music and will certainly derive more pleasure from it than those who may be able to pass the required tests well, and have more talent, but have little interest in learning to play (Andrews & Leeder, 1953, p. 268).

A 1959 text by Charles Righter, however, showed that this attention to student interest was not unanimously accepted.

> Be fairly ruthless in discouraging students who are obviously lacking in those attributes which are essential to at least a measure of success. Every failure leaves its mark upon the individual, and any student who is predestined to failure on the basis of every reliable test should be protected to the extent that he be encouraged to do something else which he can probably do better (Righter, 1959, p. 96).

Righter did not indicate what those "reliable" tests were.

Wolfgang Kuhn (1962) re-emphasized the importance of student interest. He said that it is very necessary both for the student and the program that students "having particular interest, talent, and aptitude for instrumental music should be discovered and encour-

aged." Kuhn felt that "without interest, even the most gifted child will not progress satisfactorily." He also stated that emphasis on special physical characteristics is not warranted (Kuhn, 1962, pp. 13-14).

Charles Hoffer (1964) in Teaching Music in the Secondary Schools agreed that the emphasis should be on student desire.

> A teen-ager can accomplish wonders--when he wants to. He can become proficient on an instrument while appearing to defy all the physical qualifications. The teacher should guide students in instrument selection, but should not require that they take a particular instrument or none at all. The incidence of drop-out among students who begin on an instrument other than their first choice is higher than normal (Hoffer, 1964, p. 287).

This last sentence is of particular interest to the present study since it shows that, in at least one man's opinion, instrument assignment may affect student persistence.

Robert House (1965) presented a rather inconsistent view of instrument assignment. He admitted that "all present forms of instrument selection are comparatively ineffective"(House, 1965, p. 20). Despite this statement, however, he quoted the general qualifications listed in Norman (1939) and added the following philosophic note: "We can only hope to consult the individual's interests, broadly interpret his physiological qualifications, and hold the door of opportunity open at all times" (House, 1965, p. 67).

Some of the problems that teachers have in trying to gain

insight into the practical methods of instrument assignment become apparent from this overview.

(1) There is a great deal of inconsistency both within and among instrumental music education textbooks when they deal with the problem of instrument assignment.

(2) Textbooks stating that the student's temperament must match the instrument assigned, rarely give useful criteria to follow in assessing temperament.

(3) Although some authors question their worth, specific physical characteristics necessary for an advantage in learning each of the instruments are quoted in even fairly recent books.

(4) The importance of student choice emerges as the single most controversial issue.

(5) The authors neither in texts nor in bibliographies make reference to any empirical research that has been done in this area.

2. STATEMENT OF THE PROBLEM

The disparity of approaches to instrument assignment that were offered in the literature range between two extremes. At one extreme, instrument assignment decisions are teacher dictated. With this approach the teacher alone selects the instrument of study,

usually on objective criteria such as physical and temperamental characteristics, musical aptitude or talent, and organization needs. The advantages of such an approach are that it facilitates (1) a balanced instrumentation, (2) maximum use of the instruments available, and (3) optimal matching of students to instruments (assuming that the criteria used for matching are valid). At the other extreme, instrument assignment decisions are student centered. The advantage of this approach in which students are allowed a free hand in choosing an instrument of study is that it maximizes the probability that students will be highly motivated.

At a practical level, probably neither extreme is a workable policy. A totally teacher-dictated approach is incompatible with prevailing educational philosophy and doomed to failure in an elective such as instrumental music in which student interest is so very necessary to a successful program. A totally student-centered approach is also impracticable since the number of instruments that must be available to allow students complete freedom of choice would make this policy economically unacceptable to most school boards. Even if the instruments were available, the lack of control over instrumentation would likely result in an unworkable combination.

Most teachers attempt to arrive at a satisfactory compromise between the two extreme approaches, and herein lies the problem. What reliable guides can be used to properly match students and

instruments? What balance should be maintained between teacher advice and student preference? The problem dealt with in the present study is: To what extent should student preference be considered in the assignment of instruments?

3. PURPOSE OF AND NEED FOR THE STUDY

Two recent studies of instrumental music dropouts reported student dissatisfaction with the assigned instrument. In one (Martignetti, 1965, p. 181), it was noted that 69 per cent of the dropouts were not happy with their assigned instrument. This is certainly a very clear indication that present means of instrument assignment are inadequate. In the other study (Jensen, 1970, p. 75), it was reported that 18 per cent of the dropouts wrote in on a questionnaire that they were dissatisfied with their assigned instrument. This prompted the author of that study to conclude that student choice should be given greater consideration in the assignment of instruments. Although in both of these studies the role of student preference in the assignment of instruments was peripheral to the main area of concern, it was implied that this factor may influence student persistence.

In the present study the importance of student preference in instrument assignment is investigated directly in an attempt to determine its effects upon student persistence. It is hoped that this study will result in a better understanding of student preference and its

importance to the assignment of instruments.

4. HYPOTHESES AND QUESTIONS

Part I: Null Hypotheses

The statistical hypotheses are stated in null form under three headings--major, alternative, and minor. The major hypothesis stems directly from the research problem and is designed to test the relationship between persistence and assignment categories which are based on the students' choices. The alternative hypotheses are designed to test a number of alternative variables for their effects on persistence. They are introduced for control purposes and are necessary in an ex post facto design such as Part I of the present study. The minor hypotheses are formulated to test the interaction effects of instrument assignment category combined with each of the other independent variables.

Major Hypothesis:

H(1) There is no significant difference in student persistence among instrument assignment categories.

Alternative Hypotheses:

H(2) There is no significant difference in student persistence between male and female students.

H(3) There is no significant difference in student persistence among students entering MELAB at age eleven, twelve,

or thirteen.

H(4) There is no significant difference in student persistence among students entering MELAB with different levels of previous musical training.

H(5) There is no significant difference in student persistence among students classified by the instrument of their first choice.

H(6) There is no significant difference in student persistence among students classified by their assigned instrument.

Minor Hypotheses:

H(7) There is no significant difference in student persistence among male and female students in instrument assignment categories A, B, or C.

H(8) There is no significant difference in student persistence among students entering MELAB at age eleven, twelve, or thirteen in instrument assignment categories A, B, or C.

H(9) There is no significant difference in student persistence among students entering MELAB at three different levels of previous musical training and in instrument assignment categories A, B, or C.

H(10) There is no significant difference in student persistence among students classified by instrument family of their

first choice and their instrument assignment category.

H(11) There is no significant difference in student persistence among students classified by family of the assigned instrument and instrument assignment category.

Part II: Experimental Questions

In this study the instrument assignment categories are based on two factors--the instrument chosen, and the instrument assigned. Part II of the present study involves an interview designed to explore each student's feelings about these two factors with the hope that it will help the researcher better to understand the effect of instrument assignment on the student. The following three questions are investigated:

Q(1) On what bases do the students make their initial choice of instruments?

Q(2) How do students react to their assigned instrument?

Q(3) Do the first choice instruments remain consistent after the students have received six months of instrumental training?

5. DEFINITION OF TERMS

The following definitions are adopted and will be used throughout the present study:

assignment category. This expression refers to three

arbitrarily defined instrument assignment categories. Category A comprises students who were assigned their first choice instrument, category B comprises students who were assigned their second or third choice, and category C comprises students who were assigned an instrument other than one of their choices.

dropout. This term is only used in reference to students withdrawing from an instrumental music program before normal graduation.

literature. This term refers to the books and textbooks about music education that are discussed in the first section of this chapter. It does not include research in any form.

MELAB. This is the abbreviation for the Music Education Laboratory at the University of Alberta, Edmonton. It is an instrumental music program for the students from grades 7 to 12 who are the population for the present study.

persistence. This term refers to the duration of a student's membership in an instrumental music program (usually MELAB). Persistence is used as a criterion or dependent variable in Part I of this study where it has a range of from 1 to 70 months.

previous musical training. This expression refers to the number of years of lessons a student took on a musical instrument before entering MELAB.

program. This term refers to an instrumental music program.

Most often it will refer to the MELAB program.

restricted persistence. This expression refers to a criterion created as an alternative to persistence in order to reduce the mean. The maximum duration of restricted persistence is set at 24 months thereby reducing the range from 1 to 70, to 1 to 24.

6. GENERAL DESIGN OF THE STUDY

The research was designed in two parts. Part I was a statistical investigation using 200 students who entered MELAB in 1963, 1964, and 1965 as _ex post facto_ subjects. Part II involved interviews with 59 students who entered MELAB in 1969.

In Part I the variables drawn from student files were sex, age, previous training, Seashore pitch and tonal memory scores, instrument chosen, instrument assigned, instrument assignment category, and persistence. As a preliminary investigation, the Seashore pitch and tonal memory scores were tested for prediction of persistence. Each of the major, alternative, and minor hypotheses were then tested with multiple regression using persistence and restricted persistence successively as the criteria.

In Part II the students were interviewed by the present author according to a schedule of nine questions. The students were questioned about their choice of instruments and their reaction to the instrument they were assigned. They were then asked what instru-

ment would be their present first choice. Chi square was used to determine the statistical significance of the distribution of the responses to the interview questions.

7. LIMITATIONS

1. This study is limited to three arbitrarily defined instrument assignment categories which group students together for statistical manipulation according to whether the instrument to which they were assigned was of their choice or not. Students who received the instrument of their first choice are in instrument assignment category A. Students who were assigned an instrument which was their second or third choice are in assignment category B. Students who received an instrument other than their three choices are in assignment category C. The assignment categories as defined differ only in the degree to which student choice was reflected in the assignment. Other factors which may have influenced the assignment of instruments are not dealt with directly in this study.

2. Persistence and restricted persistence are the only criteria used throughout the study. Persistence refers to the duration of a student's active membership in MELAB, and restricted persistence is an arbitrary limitation of 24 months to persistence. One advantage of these criteria over others such as musical growth, performance level, and interest level is that they avoid the value judgements in-

volved in the latter. Although studies such as Lamp (1933), Lamp and Keys (1935), and Manor (1950) in which performance tests were developed achieved a high degree of reliability in these tests, reliability may have been achieved at the cost of validity. The tests were perhaps oversimplified, and depended almost entirely upon sight-reading ability. A second advantage of using persistence is the simplicity with which it can be expressed numerically. Persistence is numerical by definition, whereas the other criteria must be converted to a numerical form by testing and ranking.

3. The population used in this study is limited to students of the MELAB program. All of the students in this program begin their instruction at the grade seven level and may continue in MELAB until high school graduation. All of the standard band and orchestra instruments are taught--fifteen different instruments in all. The MELAB students are taught by a class of university students (student-teachers) in a combined course of teaching methods and practice teaching. The MELAB students and program are more fully described in Chapter III. The subjects for Part I of the study are 200 students who entered MELAB in 1963, 1964, and 1965, and those for Part II are 59 students who joined the program in the fall of 1969.

4. Part I of the study deals with students who have left the program and studies the results of a situation which has already taken place. This type of research in which the "experimental" situation

took place without deliberate randomization, control, or treatment is often called *ex post facto.* Because the researcher is unable to manipulate the subjects or situation in this type of research as he is able to do in an experimental design, there are limitations to the interpretation and generalization of the results. These limitations will be discussed in relation to the present study in the second section of Chapter III.

8. ORGANIZATION OF THE REMAINDER OF THE STUDY

In Chapter II research which is related to the problem is reviewed, synthesized, and discussed in relation to the present study. Chapter III outlines the design of the study. The population is described, the design is presented, and the statistical procedures are described. In Chapter IV the results are analyzed and interpreted, the hypotheses are rejected or not rejected, and the experimental questions are answered. Chapter V includes a summary of the study, the conclusions, recommendations, and suggestions for further research.

CHAPTER II

RELATED RESEARCH

In this chapter, forty years of research concerned with student choice and instrument assignment are reviewed. Although no research was found that was directly related to the present study, two studies dealing with student instrument choice are reviewed in the first section of this chapter. In the second section, studies related to the interest and motivation of instrumental music students are reviewed in an attempt to discover the effect of student preference and instrument assignment on motivation and the development of continued interest resulting in persistence. In the third section, studies concerned with the validity of various instruments of prognosis are reviewed, such "talent tests" being widely used in the selection of students for the instrumental music program and sometimes for guidance in the selection of an instrument. In the fourth section, some of the more recent studies concerned with the causes of high student dropout rates are reviewed. And finally, in the fifth section, all of the research reviewed is synthesized and discussed in relation to the present study.

1. STUDENT CHOICE OF INSTRUMENT

Only two studies were found that dealt directly with the student's choice of instruments. The earliest of these was a master's thesis by James Webster (1955) entitled "A Study of Children's Reasons for Choice of Instrument." Webster used a questionnaire to survey the instrumental music students of 16 randomly selected Kansas schools. One of the questions included in the questionnaire asked the student his reasons for choosing his instrument. Of the fixed alternatives provided, those that most commonly received a response are as follows:

(1) I liked the way it sounded.
(2) The instrument just intrigued me.
(3) It looked easy to play.
(4) My mother or father thought it best that I play it.
(5) They needed it in the band. (Webster, 1955, p. 23).

Webster found that 60 per cent of all responses involved values intrinsic to the instrument chosen while the remaining 40 per cent involved external influence exerted by parents, friends, or teachers. Unfortunately Webster reported neither the grades nor the length of music study of his subjects, nor did he include a description of the type of music program that was used in the Kansas schools. Since some of the subjects might have been studying music for six years, they could not be expected to recall accurately their reasons for choosing their instrument. For this reason and the fact that there was no proper review of the research, the Webster study was of

little benefit to the present investigation.

The second study which was found to deal with students' choice of instruments was "An Experimental Investigation of Factors in Children's Selection of and Adaptation to Four Orchestral Instruments," a doctoral dissertation by Richard Coy (1966). This was a highly controlled experiment using as subjects 14 boys and 9 girls with an average age of ten years. Each of the subjects, none of whom had any previous training on an orchestral instrument, was taught the snare drum, violin, clarinet, and trumpet, beginning with the instrument of the subject's preference. The instruction, which took place over two semesters, totalled three hours per instrument at the conclusion of which a simple music performance test was given. After instruction on all of the instruments, over half of the subjects changed their original choice. This new choice, however, did not match the instrument for which the student appeared to be best adapted in 65 per cent of the cases. Coy (1966, p. 63) concluded that, even under the experimental conditions of instrument trial and instruction, students' choices were not reliable, making it evident that if the student is to be assigned the instrument for which he is best adapted, some form of guidance is required.

2. INTEREST AND MOTIVATION

A master's thesis by John Markarian (1951) surveyed the

schools in a number of Massachusetts towns to determine the percentage of students involved in, and the common factors about the operation of, the instrumental music programs. This thesis was based on the assumption that schools with the highest rates of instrumental music participation must have the most effective motivating devices (Markarian, 1951, p. 44). The size of the town in which the schools were located was found to be the most common factor, the smaller towns having the highest rates of participation. None of the factors that Markarian lists as being common to high participation programs appear to have anything to do with motivation; for example, "piano classes were not offered" (Markarian, 1951, p. 46). Instrument assignment practices were not explored by Markarian as possible factors.

A much better study of interest and motivation, a doctoral dissertation entitled "An Analysis of Certain Factors Relative to the Promotion of Interest in the Study of Musical Instruments," was completed in 1954 by Constantino Nagro. His study included a very large survey in which teachers, administrators, parents, and students in Illinois urban areas were interviewed. Nagro found that musical atmosphere in the home, particularly the existence of a preference for classical music or participation in musical performance, was an important factor in interesting students in instrumental study. The desire to play in school bands and orchestras was found to be the

greatest single motivating factor. Nagro (1954) also found that students already participating in instrumental music often indicated a desire to learn another instrument in addition to the one that they presently played.

Erwin Schneider and Henry Cady (1965, p. 159) in Evaluation and Sythesis of Research Studies Related to Music Education reviewed two studies that agreed that the influence of the home was important to the motivation of students toward instrumental music training. Both a 1932 thesis by Dorothy Hughes and a 1958 dissertation by Wesley Amar found that the presence of musical instruments in the home and the participation of parents in musical performance were prime factors in this influence.

A 1969 dissertation written by Ernest Wolfle at Indiana University found slightly different interest factors. This study, entitled "Relationships Between Selected Factors and Participation and Non-Participation in Instrumental Music in the Cincinnati Public Schools," used a self-administered questionnaire of a closed form in which students checked responses most nearly corresponding to their reasons for entering the instrumental program. The most commonly checked reasons were: (1) for my own pleasure (2) liked music, became interested, and (3) wanted to play a musical instrument. Although not suggested by Wolfle (1969), any or all of these reasons could be related to the prime motivation factor found by Nagro(1954), i. e., a

desire to play in the school band or orchestra.

A 1957 study by J. C. Gowan and May Seagoe which was published in the California Journal of Educational Research investigated the relationship between interest and aptitude in music. In this study two measures of interests, the musical scale of the Kuder Preference Record and the aesthetic scale of the Allport-Vernon Study of Values (unrevised), were correlated with the Seashore (revised) subtests and their total. The only significant correlation found ($r = -.27$) was between the Seashore pitch test and the Kuder Preference. Seagoe and Gowan (1957, p. 45) concluded that "little if any correlation has been shown to exist between a measure of musical aptitude (Seashore) and measures of musical interest."

In the previously discussed Coy (1966) study, interest in music was determined by means of a questionnaire that was developed by the investigator. He found significant (.05 level) rank-order correlations between the average of the Seashore battery and interest (rho = .45), and between the sum of Seashore pitch and rhythm scores and interest (rho = .43). Coy also correlated interest with performance, resulting in the following non-significant coefficients:

drum performance	-.01
violin performance	.21
clarinet performance	.25
trumpet performance	.37
performance average	.23 (Coy, 1966, p. 46).

3. PREDICTION OF SUCCESS

Charles J. Lamp, in two studies done at the University of California at Berkeley, attempted to measure and predict aptitude for specific musical instruments. The first study, a doctoral dissertation completed in 1933, gathered IQ scores, Seashore battery scores, dental formation, lip thickness, and taper of fingers. The subjects, 62 beginning instrumental high school students, were given a try-out period of instruction on each instrument (violin, clarinet, and one E flat or B flat brass) beginning with the instrument of their choice. At the conclusion to each try-out period, they were rated according to a specially designed and validated performance test. The best correlation between IQ and performance was found on the brass instruments (.33 ± .070). Brass performance also had the highest correlation with Seashore (unrevised) pitch scores (.52 ± .068) and tonal memory scores (.48 ± .080). No significant correlation with any instrument was found for evenness of teeth or for finger taper. A correlation coefficient of only .275 was found between lip thickness and mouthpiece diameter when brass performance was held constant. The correlations for performance among the three instrument families tested were:

brass and woodwind	.44 ± .133
brass and string	.40 ± .102
woodwind and string	.72 ± .053

Lamp suggested that the significant correlation between woodwind and

string performance might be due to the common element of digital dexterity necessary in the performance of instruments in both of these families. Lamp concluded that none of the tests and measurements, mental or physical, could be used in a valid prediction of success on a specific instrument. The controlled try-out method proved to be the most accurate means of determining instrumental ability and adaptability (Lamp, 1933, pp. 71-74).

The second study, done in collaboration with Noel Keys, was published in the November, 1935 Journal of Educational Psychology. This research project investigated the same factors as did the 1933 study, and resulted in similar findings. Table 1 shows that, as in the earlier study, Seashore pitch and tonal memory correlated best with brass performance. None of the physical traits revealed a significant correlation with success on any of the instruments. Lip thickness correlated only .28 ± .088 with the diameter of the mouthpiece. The correlations for performance among the three instrument families were:

brass and woodwind	.51 ± .06
brass and string	.31 ± .07
woodwind and string	.57 ± .05

(Lamp & Keys, 1935, p. 594).

Correlations involving woodwinds are again the highest, but the correlation between woodwinds and strings is much lower in this study than in the 1933 study. Multiple correlation coefficients obtained from

Table 1. Raw correlations of each of five mental and physical measurements with success on three types of musical instruments as determined by objective tests following experimental tryouts (Lamp & Keys, 1935, p. 592).

Predictive Factor	N	Type of Instrument		
		brass	woodwind	string
IQ on Terman group test	81	.33 ± .067	.20 ± .072	.20 ± .072
Seashore pitch	93	.49 ± .054	.40 ± .056	.35 ± .061
Seashore tonal memory	93	.45 ± .056	.24 ± .066	.28 ± .065
Finger length	50	-.13 ± .094	.14 ± .094	.17 ± .093
Teeth evenness	50	-.01 ± .095	.13 ± .094	.16 ± .093

the IQ plus the two Seashore measurements were .58 for the brasses, .42 for the woodwinds, and .39 for the strings. Lamp and Keys (1935, p. 595) concluded that the mental and physical measurements which they used were inadequate for individual guidance to a specific instrument and that the try-out or short-exposure technique was superior for determining musical aptitude for specific instruments.

In 1938 Fordyce Rhoades completed a master's thesis entitled "An Evaluation of Measures for the Prediction of Success in Instrumental Music Study." Rhoades used nine tests--Seashore pitch and tonal memory, Kwalwasser-Dykema (1930) pitch and rhythm imagery, original (developed by the investigator) pitch and rhythm imagery, Terman IQ, musical record, and character traits--to predict the success of 114 first year instrumentalists. After one year of instruction, the subjects were ranked for correlation purposes according to an achievement test. The musical record, a rating done by the student's previous general music teacher, proved to be the best predictor with a correlation of .587 ± .088. IQ, with a correlation of .549 ± .092, and the Seashore pitch test, with a correlation of .506 ± .090, were the only other significant prognostic factors. A composite score of these three significant measures produced a rank-order correlation coefficient (.69 ± .067) higher than any single test coefficient (Rhoades, 1938, pp. 57-58). Rhoades concluded that this composite score could certainly be useful for general prognostic

purposes but is still not accurate enough for specific individual guidance.

Harold C. Manor reported in the Journal of Educational Psychology, January 1950, the results of a study of the guidance value of a number of measures including: IQ (California Elementary Intelligence Test); Seashore (revised) pitch, tonal memory, and rhythm; persistence rating; tonette scores; adaptation test scores; and previous training. The experimental period included eight weeks of tonette instruction; an adaptation class in violin, clarinet, trombone, and drum; and fourteen weeks of instruction on one of the above instruments which was chosen by the student. The correlation coefficient for IQ and achievement was only .09. Of the Seashore subtests, pitch correlated best (r = .49) with achievement. The correlation between persistence rating and achievement was .36 and between tonette and achievement .41. Previous training (r = .29) and adaptation scores (r = .27) were of about equal value in predicting success. Manor (1950, p. 44) concluded that "none of the obtained correlations were sufficiently high that rigid differential guidance could be justified."

Two other studies reviewed agreed with the general findings and recommendations of Lamp, Rhoades, and Manor. One of these, a master's thesis by Owen West (1954) dealt with the problem of guidance in the selection of a particular instrument. This study has an excellent review of the research up to 1954 particularly in the

areas of musical aptitude and the value of dental-facial tests. West (1954, p. 71) found no reliable guide for predicting success from musical aptitude tests, nor did he find significant correlation between physical features and achievement. The second study, one which was previously discussed (Coy, 1966), also found that correlations between achievement and talent (as measured by the Seashore battery) were too low for practical individual guidance. The best correlation found by Coy (1966, p. 45) between the Seashore tests and achievement on snare drum, violin, clarinet, and trumpet was for clarinet and the average of pitch and rhythm (rho = .60, significant at .01 level).

In 1956 Sylvester Schmitz investigated the Seashore tests (revised) and the Kwalwasser-Ruch Test of Musical Accomplishment for prognostic value in predicting the success of 209 students in the music education program at Northwestern University. He found that the range of the Kwalwasser-Ruch and the Seashore Form A tests were inadequate for prediction at the university level. The Seashore Form B, which has since been discontinued, was found to be the most effective forecaster of grades, but it was concluded that the prediction of upper and lower quartiles from test scores was not feasible.

In 1963 Frank Pinkerton completed a survey entitled "Talent Tests and Their Application to the Public School Instrumental Music Program" which was published in the Journal of Research in Music Education. Pinkerton (1963, p. 78) came to the conclusion that there

was "little agreement among music psychologists, teachers, and supervisors as to methods of selecting instrumental music students in the public schools."

A master's thesis by Don Pence (1942) dealt with the effects of maturation on wind instrument progress. He concluded that students are often started too early, and that about thirteen years of age is the optimum age for beginning to learn a wind instrument (Pence, 1942, p. 62).

4. INSTRUMENTAL MUSIC DROPOUTS

The purpose of a study by Elizabeth Tate (1962) was to determine factors that influenced dropouts from the instrumental music programs of elementary schools in Omaha, Nebraska. From a questionnaire completed by the dropouts, Tate identified a lack of interest as the primary factor. Other factors, influential but of less importance, were identified as health and lack of success or ability.

George Casey (1964), questioning students from grades 5 to 12 in Moline, Illinois, divided them into active and dropout categories and tested for differences in mean IQ scores, academic grade-point average, and music test scores. Little difference was found between actives and dropouts with the exception that no student scoring less than 50 per cent in mean music test scores remained in the program. The reasons most commonly given for dropping out of the program

were:

(1) centered around the interest factor
(2) scheduling conflicts
(3) inability to achieve satisfactory level of performance, and
(4) dislike of teacher.

In Oakland, California, Edwin Carl Kruth (1964) found that dropouts from the music program had a higher median IQ than actives and that often their reason for withdrawal was lack of challenge. Like Tate (1962), Kruth found that dropouts often had scheduling problems.

Anthony J. Martignetti (1965) surveyed students and teachers in an attempt to determine the causes of elementary school instrumental dropouts. The three most common reasons given by the dropouts were: (1) loss of interest (2) lack of ability, and (3) illness. In the opinion of the teachers the reasons were:

(1) loss of interest resulting from parental indifference
(2) lack of perseverence
(3) lack of ability, and
(4) conflict with after-school activities (Martignetti, 1965, p. 178).

Sixty-nine per cent of the dropouts thought that the instrument they were assigned was too difficult, and 33 per cent of them did not like the instrument they received (Martignetti, 1965, p. 181).

The Wolfle (1969) study which was previously discussed found the following reasons for withdrawal:

(1) loss of interest
(2) not enough time to practise or perform
(3) had other interests (after school)
(4) hated to practise

(5) boring, got tired of it
(6) lacked patience and perseverence, and
(7) did not have room on my schedule.

It is important to note that this study, as well as the other recent studies of dropouts that have been reviewed, identified the interest factor as the most important influence of dropouts. Earlier studies by Miller (1949), Schweizer (1951), Kinnison (1951), Heller (1954), and Bergan (1957) identified "scheduling problems" as the most important factor. This difference may be due to the fact that in most of the earlier studies it was the teachers or music supervisors and not, as in the more recent studies, the students who were the subjects of the surveys.

An M. Ed. thesis completed in the spring of 1970 by F. Deane Jensen is of particular importance to the present study because it dealt with the same population, i. e., MELAB. Jensen developed a questionnaire which was completed by 127 students who had dropped out of the MELAB program. In the fixed-response questionnaire, the students were asked to check the reason or reasons that resulted in their withdrawal. The reasons most commonly checked were:

(1) too much time required for practising
(2) need more time for extra-curricular programs
(3) not enough variety of activities
(4) not enough variety of music
(5) disliked instructor(s)
(6) conflict with athletics, and
(7) should have offered greater variety of program (Jensen, 1970, p. 67).

Space was provided for the students to write in "other reasons" not included on the questionnaire. In this space, 23 students wrote in "did not like the assigned instrument." This prompted Jensen (1970, p. 75) to include the following recommendation:

> One of the prime considerations for placing a student on an instrument should be the students' own choice. The MELAB study showed that 18 per cent of the students volunteered this reason as one of the main reasons for drop out. (Had this item been included on the drop out questionnaire, a greater response could have been anticipated.)

Since the Jensen study did not investigate the relationship between instrument assignment and dropouts, this recommendation appears to be beyond the scope to that study. It is, however, as was shown in Chapter I of the present study, a widely held opinion.

5. SUMMARY OF THE RELATED LITERATURE AND RESEARCH

In Chapter I of this study, a number of definitive statements about the importance or lack of importance of the student's choice of instrument, and about the proper mental, physical, and emotional characteristics students should possess to succeed in instrumental training are quoted from books written by prominent music educators. The emphasis in these books has shifted in recent years away from rigidly defined characteristics toward a greater acceptance of the student's preference. No empirical evidence, however, was documented to support any of these opinions.

A review of the related research found almost no studies that dealt with the importance of the student's choice and the effects of the instrument assignment on student persistence. It was reported in one recent study that the student's choice was not a reliable indication, even after short-exposure instruction, of the instrument of best adaptation. It was also reported that the students' choices did not remain consistent in over one-half of the cases.

If student choices are neither reliable nor consistent, it is apparent that further guidance in the selection of an instrument is necessary. A number of studies from as early as 1933 were found to be concerned with this problem of guidance. Conclusions drawn from these studies are as follows:

(1) there is no significant relationship between physical features and success in instrumental music

(2) music aptitude tests have only very limited ability to predict success in instrumental music, and

(3) the only reliable method of selection appears to be the short-exposure or try-out period of instruction.

Two important points came from a review of research that dealt with the interest and motivation of instrumental music students. The first is that no significant relationship was found between interest and performance ability. The second is that interest and motivation appear to be dependent upon environmental factors rather than innate

ability.

Recent surveys to determine the causes of student dropouts in instrumental music concluded that the principal reasons are centered around the interest factor. This conclusion however is not of much help to the teacher since loss of interest could be caused by many reasons. Dissatisfaction with the instrument assigned or lack of success in playing it have appeared as reasons for withdrawal.

CHAPTER III

DESIGN OF THE STUDY

1. POPULATION

MELAB was initiated in 1963 as an attempt to make the undergraduate practice teaching situation a more "satisfactory approximation to the confrontation of the first year of teaching" (Smith, 1966, p. 83). It puts the curriculum and instruction course in music education on a singularly practical and immediately relevant level. The student-teachers enrolled in the course are involved in all aspect of the MELAB program which at the outset includes recruiting, testing, interviewing, and selecting students.

Each fall grade seven students are recruited for MELAB junior band and string orchestra classes from Edmonton schools that do not have instrumental programs. The instruments are loaned to the students for the first year of their MELAB training. The students are required to attend five hours of rehearsal per week and in addition to do individual practice at home. The only cost to the student is a nominal registration fee.

Students may remain in MELAB until high school graduation. The MELAB senior and concert bands and orchestras offer advanced

training for the students and also for the senior student-teachers. Students remaining in MELAB after the first year of training are expected to supply their own instruments. The unpopular and expensive instruments, however, are loaned to the students for as long as they remain in MELAB although the purchase of even these instruments is encouraged.

In the MELAB program, the policy of instrument assignment is based upon a compromise between student preference and the needs and limitations of the organization. The manner of instrument assignment has remained fairly consistent in the seven years that MELAB has been in existence. Prospective MELAB members are given a battery of tests which includes parts or all of the Seashore Measures of Musical Talent and the Farnum Music Notation Test. The Seashore test is used to determine the students' talent in pitch discrimination, rhythm, loudness, time, timbre, and tonal memory. The Farnum test is used to place students according to their knowledge of music notation. The students are then given a cursory physical examination. Height, weight, and build are noted and hands, lips, jaws, and teeth are checked for musically significant characheristics. The students are also questioned to determine their state of general health, interests, attitude toward music, position in the family, and personal temperament. Following testing and physical examination, the students are given a brief demonstration of the instruments. This

demonstration is given by the student-teachers, many of whom have only recently become familiar with some of the instruments, and is mainly limited therefore to helping the applicants to identify the instruments. Students are shown the flute, oboe, clarinet, bassoon, saxophone, trumpet, horn, trombone, baritone, tuba, percussion, violin, viola, violoncello, and double bass.

After this demonstration the students are interviewed at which time they are asked whether they prefer to join a band or a string orchestra and to state the three instruments which they would most like to learn. On the basis of these choices, the initial assignments are made. Those students who ask for unpopular instruments, in particular strings, as their first choice are so assigned, barring any physical impediment. Students who choose the trumpet, horn, or flute, and posses normal or "good" lips, jaws, and teeth as described by Norman (1939, p. 50), also usually receive their choice. The students who do not fit into either of these categories are assigned an instrument on the basis of physical characteristics and organization needs but with consideration for students' preferences wherever possible.

Each student falls into one of the three assignment categories that have been defined. Although the distribution varies from year to year, the students are generally distributed approximately evenly among the categories. Because a large number of students

frequently choose a few popular instruments, however, the distribution of instruments among categories is always biased. Category A, which is made up of students receiving their first choice of instruments, has a disproportionately large number of drums, saxophones, clarinets, and trumpets. Category B, which is made up of students receiving a second or third choice, has a fairly even distribution of instruments. Category C, which is made up of students receiving an instrument other than one of their choices, has a disproportionately large number of strings and lower brasses.

The instrument which is assigned is recorded and kept in a file along with the student's application form, tests and measurements, interview form, results of viva voce (performance) examinations, and all other records and correspondence pertaining to the student. The application and interview forms which have been used at MELAB since 1964 are shown as Appendices A and B. The forms used in 1963 were basically the same with only minor changes. The 1963 interview form was less extensive in questions about family and attitude. Student files are maintained throughout membership in MELAB and retained indefinitely after withdrawal. It was the maintenance of these files which made Part I of this study possible.

There are both advantages and disadvantages in the use of MELAB students for the population of this study. The most obvious advantage is the convenience of the student records. A researcher

would have to look far to find another instrumental music program with six years of records as complete as those at MELAB. Another advantage results from the system of rotating student-teachers in MELAB whereby all of the students in both band and strings have the same teachers for an approximately equal number of periods. This precludes the possibility of teacher bias since all of the students are taught by both the excellent and mediocre student-teachers. Yet another advantage accrues from the fact that MELAB students are drawn from many parts of the City of Edmonton. The result is a better socio-economic cross-section of the city than is generally found in any single school although this would be less true for students beginning in 1963 when the program, in its first year, drew students predominately from the residential areas surrounding the University of Alberta.

The main disadvantage of using MELAB is the fact that it is a teaching laboratory situation and is therefore not directly comparable to the regular teaching situation. Since students involved in MELAB are taking instrumental music as an extra-curricular activity rather than as a regular school subject, their attitudes and opinions may be different from those students who receive instrument instruction in the school.

Table 2 compares MELAB students used in Part I and Part II of the research for distribution according to sex, previous training,

Table 2. MELAB students used in Part I (1963-65) and Part II (1969) distributed according to sex, previous musical training, organization, and instrument assignment category.

	Part I (N=200)		Part II (N=59)	
	N	%	N	%
Sex				
Male	108	54	37	63
Female	92	46	22	37
Previous Training				
none	87	44	32	54
1 year or more	113	56	27	46
Organization				
Strings	72	36	20	34
Band	128	64	39	66
Assignment Cat.				
A	62	31	19	32
B	59	30	19	32
C	79	40	21	36

organization, and instrument assignment category. It can be seen that the distribution is similar for both of these groups. There are more male than female students in both groups, the students entering in 1969 being 63 per cent male compared to 54 per cent in the earlier group. There is also a difference between the groups in the amount of previous training. Of the students used in Part I, only 44 per cent had no previous training, whereas 54 per cent of the students used in Part II entered MELAB without previous musical training. For both groups there are more band than string students--64 per cent band for Part I and 66 per cent band for Part II--in spite of the fact that strings were not offered to students entering MELAB in 1963. There was, however, a large string class in 1964. The distribution of students according to instrument assignment category is similar for both groups. The number of students receiving their first choice (category A) or their second or third choice (category B) varies from 30 to 32 per cent. About 40 per cent of the students received an instrument other than one of their choices (category C) in Part I, whereas 36 per cent of the Part II students fell into this category.

2. RESEARCH DESIGN

The design of this study is in two parts. Part I is a statistical investigation of a number of variables drawn from the files of students who entered MELAB in the first three years of its existence. This part of the research will be used to test the statistical null hypotheses. Part I is in the form of research generally referred to as *ex post facto*.

Part II is an interview with MELAB students who were just completing their first six months in the program. The students were asked questions related to the hypotheses. The results of the interviews are used to aid in the interpretation of practical significance of the analyses of Part I data.

Part I: Ex Post Facto

Data for Part I of the research design came from the files of students who joined MELAB in 1963, 1964, or 1965. The following information was recorded for each individual: sex, age (in years), previous musical training (in years), Seashore pitch and tonal memory test scores, instrument of the student's first choice, instrument assigned, instrument assignment category, and persistence (in months).

Since the definition of persistence (duration of a student's MELAB membership) required a knowledge of when the student with-

drew from the program, it was only possible to use students who had already left the program or else had an easily estimable leaving date. Since the normal period of eligibility for MELAB is from grade seven to grade twelve (six years), students entering the program in 1963 and 1964 had left by the summer of 1970. Because they were only eligible for one more year, the persistence could easily be estimated for students who entered the program in 1965 and had not withdrawn by the time of writing. It would have been impossible, however, to estimate the persistence of students who joined the program in more recent years.

The age of the students is recorded in years rather than months because of the inconsistency with which this question was completed on the student application form. Although many ages were recorded in years and months, a large number were in years only. The age used refers to the number of complete years of age at the time of application.

For similar reasons previous musical training is also recorded in years. One year of previous musical training represents at least a school year (ten months) of private or class instruction on a musical instrument. Singing or general music recorder classes were not credited. Most of the previous musical training was in piano or accordian group or private lessons. Admittedly this is not an accurate assessment of previous training because of the wide variation in the

purpose and worth of such lessons.

The Seashore pitch and tonal memory test scores were chosen because they were the only tests that were administered to all of the students. Some of the tonal memory scores were spoiled for students entering in 1965 which meant that only pitch scores are available for all of the students. The scores are recorded in raw form rather than as percentiles of the normal distribution.

Persistence is recorded as the number of months duration in MELAB from the time of enrollment until the time of leaving the organization. Only students who entered MELAB at the normal October recruiting time are included in the study. Students who entered later in the term did not take the usual tests and interview. Unlike students entering in the fall, these students sometimes were permitted to play an instrument for which they had previous training. Students who left MELAB because their family was moving out of the city were not included in the study. Persistence is a meaningless criterion in such cases.

Because MELAB is an extra-curricular activity it is in the peculiar position of having dropouts who do not actually drop out of instrumental music. Some students after taking MELAB training for three years enter high school and elect to take instrumental music as a course in the curriculum. These students leave MELAB but cannot really be considered dropouts. Other students, usually the most

proficient players, leave MELAB after three or four years of training to join more advanced musical organizations such as the Edmonton Cosmopolitan Club Band or the Edmonton Youth Orchestra. The Jensen study of MELAB dropouts found that 27 of the 127 dropouts questioned were still involved in instrumental music (Jensen, 1970, p. 62). All of these dropouts had at least two years of training before leaving the program. This situation causes persistence to lose most of its value as a criterion after the first two years of training.

Since instrumental assignment occurs at the beginning of the first year of training, it is logical to assume that the effects of assignment, if any, would be greatest in that year. To test this assumption, frequency tables in which students were classified by assignment category and whether or not they completed the year of training were respectively set up for students in their first, second, third, and fourth years. In each of the tables (3, 4, 5, and 6), the figure shown in parentheses is the expected number of cases for that cell or category calculated from the fixed totals. The chi-square (χ^2) value represents the variance of the actual from the expected frequency. The degrees of freedom (df) are the number of independent cells in the classification, and the probability (P) is that the chi square observed could have equalled to zero.

A comparison of the tables shows that the differences among instrument assignment categories decrease with each year of training.

Table 3. The number of students completing or not completing their _first_ year of MELAB training.

Completed Year?	Category A _N_ (expected)	Category B _N_ (expected)	Category C _N_ (expected)	Total
Yes	50 (44.64)	43 (42.48)	51 (56.88)	144
No	12 (17.36)	16 (16.52)	28 (22.12)	56
Total	62	59	79	200

$\chi^2 = 4.492$ _df_ = 2   _P_ = .11

Table 4. The number of students completing or not completing their _second_ year of MELAB training.

Completed Year?	Category A _N_ (expected)	Category B _N_ (expected)	Category C _N_ (ecpected)	Total
Yes	35 (35.417)	28 (30.458)	39 (36.125)	102
No	15 (14.583)	15 (12.452)	12 (14.875)	42
Total	50	43	51	144

$\chi^2 = 1.482$ _df_ = 2   _P_ = .48

Table 5. The number of students completing or not completing their third year of MELAB training.

Completed Year?	Category A N (expected)	Category B N (expected)	Category C N (expected)	Total
Yes	25 (23.676)	17 (18.941)	27 (26.382)	69
No	10 (11.324)	11 (9.059)	12 (12.618)	33
Total	35	28	39	102

$\chi^2 = 0.888$ df = 2 P = .64

Table 6. The number of students completing or not completing their fourth year of MELAB training.

Completed Year?	Category A N (expected)	Category B N (expected)	Category C N (expected)	Total
Yes	15 (15.580)	11 (10.594)	17 (16.826)	43
No	10 (9.420)	6 (6.406)	10 (10.174)	26
Total	25	17	27	69

$\chi^2 = 0.103$ df = 2 P = .95

The value of chi square is not significant for any of the years of training, however, it is important to note that chi square approaches significance (P = .11) in the first year, decreases to less than one by the third year, and approaches zero (P = .95) by the fourth year. This trend supports the assumption that the effects of the instrument assignment on student persistence are greatest in the first year of training. On the basis of this assumption and the fact that persistence loses value as a criterion after the first two years of training, restricted persistence is used as an alternative criterion.

In this study, persistence and restricted persistence are treated as the dependent variables. It is assumed that persistence may be affected by such variables as sex, age, previous training, instrument chosen, instrument assigned, and instrument assignment category. These along with Seashore pitch and tonal memory test scores as measures of potential talent are the independent variables.

As mentioned in Chapter I, there are certain precautions and limitations that are inherent in ex post facto research. Fred Kerlinger (1964, p. 371) in Foundations of Behavioural Research outlines them as follows:

(1) the inability to manipulate independent variables
(2) the lack of power to randomize, and
(3) the risk of improper interpretation.

Since the "experimental" situation had already passed when this research began, it was impossible for the researcher to exercise

any direct control over the independent variables as they affected the dependent variables. It is, however, possible to control the effects of known variables through statistical means. For this reason a set of alternative or "control" hypotheses were formulated and are used to test the effects of variables other than instrument assignment category both independently and in conjunction with assignment category.

The inability to randomize is normally the greatest weakness of ex post facto research. Randomization usually occurs at two points: (1) randomly choosing a sample, and (2) randomly assigning treatments (in this study, instrument assignment categories). The first of these, i. e. choosing a sample, does not affect the present study since the population as defined will be used. This does, however, limit the direct generalizability of the results of this study to that population. The second of the randomization weaknesses, i. e. assigning treatments, is the weakest point of this study as it is of most ex post facto research. All variables which were anticipated (the alternative variables) can be controlled by proper statistical procedures. The possibility exists, however, that differences found for the variables isolated in this study may be caused by a variable which was not anticipated or identified.

Concerning Kerlinger's third limitation, the risk of improper interpretation, the ex post facto research in this study will only be

used to determine the statistical relationship among the variables that are isolated. Any interpretation as to the practical significance, causes, or physical relationships underlying the statistical differences found will be attempted only with the support of Part II of the research design, the interviews.

Part II: Interviews

Data for Part II of the research came from interviews with the students who joined MELAB in October, 1969. Twenty-five students went into the string orchestra, and 51 students were assigned band instruments. For a variety of reasons including transportation and scheduling difficulties, 8 students (5 from category A, 2 from category B, and 1 from category C) left the program within a month of joining. Three students had not completed an application form nor had they been tested or interviewed for selection. Of the 65 remaining students, 59 were interviewed by the present author in the spring of 1970, approximately six months after the students had begun their training.

The interview schedule (Appendix C) contains the following information which was copied from the student files previous to the interview: name, sex, organization, student instrument choices, instrument received, and assignment category. This information which the students were not allowed to see during the interview was used for identification and comparison.

The interviews took place during the regular MELAB

rehearsals. The student-teachers sent students from rehearsal to the interview room at their convenience. The interviews, comprising nine questions, lasted between five and ten minutes each. Most of them were just under ten minutes in duration.

The wording of the questions was fixed according to the interview schedule. If a student was hesitant or doubtful in answering, the question was rephrased in an attempt to elicit a natural response. The interviewer, however, tried to keep as close as possible to the written wording in order to avoid suggesting answers. Some of the questions (2, 5, and 7) could be answered with a simple "yes" or "no." Other questions (1, 3, 4, 6, and 8) required comment and were more open ended. All of the questions are short and direct, and there appeared to be no difficulty in understanding them.

Part II of the study was designed to answer the three experimental questions stated in Chapter I. The first of these, Q(1)--On what bases do the students make their initial choice of instruments? --, was investigated with interview Questions 1, 2, 3, and 4.

Question 1--Before entering MELAB, how familiar were you with the orchestral instruments? --was an attempt to find out if the students were knowledgeable about the instruments before they first came to MELAB. The interviewer rated the students on a five-point scale of familiarity according to their initial response to the question, and recorded their comments. If the student did not

volunteer information concerning the source of his familiarity, the following question was asked: "Where did you learn about the instruments?"

Since Question 2—Do you think that you had an adequate enough understanding of the instruments to make an intelligent choice? --is directly related to Question 1, the interviewer expected that the answer to that question would suggest the answer to Question 2. This however, did not prove to be the case. There was almost no comment to this question. The students answered "yes" or "no" with very little qualification.

Question 3--Before you came to MELAB, had you any ideas about what instrument you wanted to learn to play? --is an attempt to determine whether or not the students coming into MELAB had set ideas about what instrument they wanted to learn. If a student answered "yes" to this question without further comment, the interviewer asked, "What were those ideas?" If a student answered the question by giving the name of an instrument or family of instruments, he was asked, "How long ago did you decide this?"

Question 4--What made you decide to choose the ________ as your first choice?--elicited considerable comment showing many sources of influence on the students' choices. The answer to this question was often closely allied to the response to Question 3. There were some instances however when the same instrument was not even

involved. This happened in cases where the student probably forgot what his original choices were, and did not remember them until he was asked Question 4 in which his original first choice was identified.

Questions 5, 6, 7, and 8 were designed to answer Q(2)--How do the students react to their assigned instruments? It was felt that after having played the assigned instrument for six months the student should have had a good idea whether or not the instrument suited him. It is especially important that the effects of assignment category on the answers to this question be determined.

Question 5--Are you happy playing the ________ (instrument received)? --was usually answered with a simple "yes" or "no." Since this might be considered a leading question, a second question, "Do you like the ________ (instrument received)?" was asked in such a way as to make the student reconsider his initial affirmative response. This led directly to Question 6—What do you like most about the ______ (instrument received)? --which was an attempt to determine the nature of things that students enjoy about their assigned instrument. If there were only one or two responses from the student, the interviewer asked, "Is there anything else that you like about the ________ (instrument received)?"

The answers to Question 7--Are you interested in continuing to study the ________? --are particularly important because they can be compared to persistence as used in Part I of the study design.

This question normally was answered with "yes," "no," or "not sure." The interviewer added, "not necessarily at MELAB," if it was felt that the question might have been interpreted as, "are you returning to MELAB?" The intent of Question 7 was to determine whether or not the student had the interest and desire to continue studying the instrument he was assigned. Question 7 is compared with Question 5 to see if students who are happy with their assignment want to continue to study that instrument.

Question 8--What do you dislike about the ________(instrument received)? --is the opposite of Question 6 and as such sometimes more naturally followed that question than did Question 7. When Question 8 was partially answered in Question 6 or seemed to result from that question, it was asked before Question 7. This was the only departure from the schedule order. If there were only one or two responses from the student, the interviewer asked, "is there anything else that you don't like about the ________ (instrument received)?"

Question 9 was designed to answer Q(3)--Do the first choice instruments remain consistent after the students have received six months of instrumental training? The answer to Question 9--What would now be your first choice of instruments? --was compared with the original choices (i. e. first, second, third, or other) and to the instrument received (i. e. same or different).

3. PRELIMINARY INVESTIGATION

Problem and Hypotheses

The review of the research showed that a low but positive and significant relationship has usually been found between the Seashore battery of tests and achievement in practical music. Generally the pitch and tonal memory tests correlated best with achievement on orchestral instruments. Studies of instrumental music dropouts found that lack of achievement and ability were important factors in the student dropout rate. This logically suggests that a positive relationship exists between student persistence as defined in this study and the student talent as measured by the Seashore pitch and tonal memory tests. To determine the strength of this relationship in the population of the present study and, therefore, to determine the necessity of adjusting the results of the statistical hypotheses testing for differences in musical talent, the following preliminary null hypotheses were tested:

H(i) There is no significant correlation between student pitch test scores and student persistence.

H(ii) There is no significant correlation between student tonal memory test scores and student persistence.

Procedure and Results

To test the preliminary null hypotheses, step-wise regression

procedures were used. Computation was done by an IBM 360/67 computer using the program MULR06 from the library of the Division of Educational Research Services (1969), University of Alberta. Persistence and restricted persistence were used alternately as the criterion variables. Pitch and tonal memory test scores were the predictor variables. Since tonal memory scores for only 170 of the 200 students were available, the regression models were computed using 170 subjects only. H(i) and H(ii) were tested and the advantage of using both predictors was calculated. Product-moment coefficients of correlation were calculated for both predictors and with both criterion variables.

The results of the step-wise regression are shown in Tables 7 and 8. In the regression analysis for pitch, the $\underline{F}$ ratio was slightly higher with a criterion of restricted persistence than with total persistence. The correlation between pitch and persistence was found to be .1975 and between pitch and restricted persistence .2090. The correlations are low but positive and significant at the .01 level. The preliminary null hypothesis H(i) is therefore rejected for this population.

In the regression analysis for tonal memory, the $\underline{F}$ ratio failed to rise to an acceptable level of significance for either criterion. The correlation between tonal memory and persistence was found to be .0208 and between tonal memory and restricted persistence -.0266.

Table 7. Results of step-wise regression showing the advantage of multiple over single regression with total persistence as the criterion.

Source of Variance	F ratio	df num.	-	df den.	P
Multiple regression........	3.57	2	-	167	.03
Pitch....................	6.82	1	-	168	.01
Tonal memory.............	0.35	1	-	168	.55
Advantage................	0.35	1	-	167	.55

Table 8. Results of step-wise regression showing the advantage of multiple over single regression with restricted persistence as the criterion.

Source of Variance	F ratio	df num.	-	df den.	P
Multiple regression........	4.74	2	-	167	.01
Pitch....................	7.67	1	-	168	.01
Tonal memory	1.76	1	-	168	.19
Advantage................	1.76	1	-	167	.19

Since no significant correlation occurred, H(ii) is not rejected for this population.

The "advantage" row in the tables is the advantage of multiple regression (using pitch and tonal memory scores) over single regression (using pitch scores only). Although multiple regression was found to significantly predict restricted persistence, no significant advantage was gained by the use of both predictors.

On the basis of this preliminary investigation into the relationship between persistence and pitch and tonal memory test scores, it was decided that the subsequent tests for the differences in categorical means should be adjusted for possible differences in pitch scores.

4. STATISTICAL PROCEDURES

Multiple Regression

Multiple linear regression was used to test the major, alternative, and minor hypotheses. This procedure was used to calulate an F ratio rather than the traditional analysis of variance (by sums of squares) because it could accommodate both categorical and continuous variables in one operation. An IBM 360/67 computer did the computations using the program MULR05 from the library of the Division of Educational Research Services (1969), University of Alberta.

The program MULR05 calculates squared multiple correlation coefficients for the defined regression models. Each hypothesis to be tested required the definition of two regression models--a _full_ model and a _restricted_ model. For the major and alternative hypotheses, the full model included knowledge of group membership (as stated in each hypothesis). The restricted model ignored group membership and therefore all groups were represented by a single unit vector. For the minor hypotheses (interaction effects) the full model included knowledge of group and subgroup membership, but the restricted model included knowledge of the group (main effect) membership only. Each hypothesis was tested three times, once with persistence, once with restricted persistence, and once with restricted persistence adjusted for pitch differences.

Hypothesis H(4) (levels of previous training) was tested with two classifications. One classification was by years of training and the other was by three levels of previous musical training. Similarly, H(5) (chosen instrument) and H(6) (assigned instrument) were also tested with two classifications. One was by instrument, and the other by instrument family (woodwinds, brass, percussion, string).

Second-order interaction was generally not tested because of the small number of subjects in some cells. Only one three-way classification--instrument assignment category by sex by previous training

(three levels)--had no empty cells. The relatively even distribution of subjects in this classification made a regression analysis possible. For this analysis the full model comprised the 18 categorical vectors created by the three-way classification. The restricted model included each of the three main effects and their first order interactions.

Chi Square

The chi-square non-parametric statistic was used to determine the probability of distribution arising from the interview questions. The expected frequency was calculated on the assumption that a random distribution would fill the cells at an even rate dependent upon the ratio of the fixed totals.

Chi square was found to be most useful in testing those interview questions which could be answered with a "yes" or "no." Q(3) was the only research question which could be directly tested with chi square.

CHAPTER IV

ANALYSES AND RESULTS

1. RESULTS OF PART I

The results of the analyses of Part I data are arranged in the order of the hypotheses being tested. For each of the major and alternative hypotheses one table displays the number of subjects ($\underline{N}$) and the means and standard deviations ($\underline{s}$) for persistence and restricted persistence. The $\underline{F}$ ratio and its probability ($\underline{P}$) are shown for both criteria. The $\underline{F}$ ratio for restricted persistence is also shown as adjusted for pitch differences. For each of the minor hypotheses, two tables are used; one for persistence, and the other for restricted persistence.

The level of significance necessary to reject a null hypothesis will be $\underline{P} \leqq .05$. An $\underline{F}$ ratio with a probability of .01 or less will be considered highly significant.

Major Hypothesis

H(1) There is no significant difference in student persistence among instrument assignment categories.

Table 9 shows that the means for both criteria are highest

Table 9. Mean persistence and restricted persistence of students classed by instrument assignment categories.

Assignment Category	N	Persistence		Restricted Persis.		
		Mean	s	Mean	s	adjusted
A	62	32.016	19.172	19.597	6.612	
B	59	28.576	19.572	18.186	7.849	
C	79	28.076	18.883	17.570	7.914	
Total	200	29.445	19.256	18.380	7.563	
	F =	0.8067		1.2724		1.0408
	P =	.45		.28		.36

Table 10. Mean persistence and restricted persistence of students classed by sex.

Sex	N	Persistence		Restricted Persis.		
		Mean	s	Mean	s	adjusted
Male	108	30.426	20.343	18.157	7.827	
Female	92	28.293	17.828	18.641	7.232	
Total	200	29.445	19.256	18.380	7.563	
	F =	0.6050		0.2016		0.1569
	P =	.44		.65		.69

for students receiving their first choice instrument (category A) and lowest for students receiving an instrument other than one of their choices (category C). The difference between the means is slightly greater when persistence is restricted, but is not great enough to yield a significant F ratio even when adjusted for pitch scores. The major hypothesis H(1) is therefore not rejected.

Alternative Hypotheses

H(2) There is no significant difference in student persistence between male and female students.

Table 10 shows that when total persistence is the criterion, the mean for the male students is slightly higher than that for the female students. When restricted persistence is the criterion, the means are almost the same. Since all of the F ratios are less than one, the alternative hypothesis H(2) is not rejected.

H(3) There is no significant difference in student persistence among students entering MELAB at age eleven, twelve, or thirteen.

Since, as Table 11 shows, only 5 students entered MELAB at age 13 whereas 120 entered at age 12 and 75 at age 11, a very cautious interpretation of the results is necessary. With this in mind it can be observed that, although none of the F ratios are significant, a definite trend is suggested, i.e., that students entering MELAB at a young age appear to remain in the program longer than do older students. This

Table 11. Mean persistence and restricted persistence of students classed by age at entry into MELAB.

		Persistence		Restricted Persis.	
Age	N	Mean	s	Mean	s
11	75	30.813	17.284	19.533	6.797
12	120	28.900	20.227	17.823	7.873
13	5	22.000	21.005	14.400	8.015
Total	200	29.445	19.256	18.380	7.563
					adjusted
		F =	0.6056	1.8951	1.9751
		P =	.55	.15	.14

trend is even more marked when restricted persistence is used as the criterion, and the F ratio is adjusted for differences in pitch scores. Because of the poor distribution of the subjects, the alternative hypothesis H(3) could not be adequately tested with the data available.

H(4) There is no significant difference in student persistence among students entering MELAB with different levels of previous musical training.

In Table 12 the means are shown for each year of previous training. However, since the number of subjects in each cell varies from 4 to 87, the students are regrouped on the right side of the table into three levels of training, thus creating a more equitable distribution of Ns. Although the differences are non-significant, it can be seen that students with previous training persisted longer than students without such training. When the students are grouped in three levels and the criterion is restricted persistence, the unadjusted F ratio approaches significance ($P = .08$). With an adjustment for differences in pitch scores, the F ratio drops from 2.61 ($P = .08$) to 1.72 ($P = .18$). A problem of interpretation arises here. Carl Seashore (1938, p. 59) maintained, and was supported by Stanton and Koerth (1933), that the physiological limit does not vary with training. This position has been challenged by Wolner and Pyle (1933) and Wyatt (1945). Wyatt, using the Seashore pitch discrimination test for measuring that capacity, found significant gains in the scores of his experimental group which

Table 12. Mean persistence and restricted persistence of students classed by previous musical training.

		Persistence		Restricted Persis.			Persistence		Restricted Persis.	
Years of Training	N	Mean	s	Mean	s	N	Mean	s	Mean	s
0	87	26.540	19.552	17.092	8.042	87	26.540	19.552	17.092	8.042
1	23	30.957	17.115	16.696	5.938	53	30.887	19.195	18.736	7.245
2	30	30.833	20.648	18.000	8.029					
3	30	30.333	18.194	19.767	6.157	60	32.383	18.264	19.933	6.750
4	18	38.333	18.065	20.722	6.623					
5	8	25.250	12. 567	19.000	8.246					
6	4	35.250	20.873	19.500	7.794					
Total	200	29.445	19.256	18.380	7.563	200	29.445	19.256	18.380	7.563
					adjusted					adjusted
	F =	1.1526		1.0242	0.7830		1.8432		2.6149	1.7205
	P =	.33		.41	.58		.16		.08	.18

received training in pitch discrimination. If Seashore's position was accepted, the adjusted F ratio would be considered the more accurate statistic since training should not affect the pitch scores. If, however, Wyatt's position was accepted, the unadjusted F ratio would be considered the more accurate statistic since part of the difference in pitch scores may be due to the difference in previous training. This could be true in the present investigation since a significant correlation (.258) was found between pitch scores and years of previous training. Although it is unclear as to whether or not this analysis should be adjusted for pitch differences, since neither F ratio reached significance, the alternative hypothesis H(4) is not rejected.

H(5) There is no significant difference in student persistence among students classified by the instrument of their first choice.

Since no student chose the bassoon, baritone, or 'cello as a first choice, only twelve instruments are represented in Table 13. N ranges from 43 for the students who asked for saxophone to 1 for the student who chose the double bass. Not counting means where N is less than five, the mean persistence ranges from 39.73 months for students who chose the flute to 22.40 months for students who chose the viola. It must be kept in mind that these are not necessarily the instruments that the students received, but simply the ones that they asked for. The F ratio reached is significant at the .05 level of confidence for both persistence and restricted persistence.

Table 13. Mean persistence and restricted persistence of students classed by instrument and instrument family of their first choice.

Instrument	N	Persistence		Restricted Persis.		N	Persistence		Restricted Persis.	
		Mean	s	Mean	s		Mean	s	Mean	s
Flute	11	39.727	15.545	22.636	3.724	91	34.165	18.196	20.297	6.599
Oboe	4	11.250	5.356	11.250	5.356					
Clar.	33	36.758	20.260	20.121	6.812					
Sax.	43	32.884	16.050	20.674	6.415					
Trpt.	36	25.639	21.532	15.361	8.300	62	27.210	21.129	16.629	8.019
Horn	16	29.438	21.468	17.813	7.626					
Trom.	7	32.286	19.455	20.143	5.514					
Tuba	3	22.333	13.474	17.333	8.055					
Drums	24	22.875	17.208	16.250	7.870	24	22.875	17.208	16.250	7.870
Violin	17	22.235	13.256	19.529	6.572	23	23.625	14.896	17.739	7.691
Viola	5	22.400	18.106	14.600	7.813					
Bass	1	3.000	0.000	3.000	0.000					
Total	200	29.445	19.256	18.380	7.563	200	29.445	19.256	18.380	7.563
										adjusted
	F =	2.0013		2.0350			3.8675		3.8894	4.1123
	P =	.03		.02			.01		.01	.01

Table 13 also shows the students classed by the instrument family of their first choice instrument. Woodwinds were the most popular first choice and strings were the least popular. The mean persistence of students who chose woodwinds was almost five months above the total mean and more than eleven months above the mean for students who chose drums. The difference between the means is significant at the .01 level of confidence for both persistence and restricted persistence. The F ratio is slightly increased and remains highly significant when it is adjusted for pitch differences. The alternative hypothesis H(5) is rejected because the differences found are significant among instruments, and highly significant among instrument families of the students' first choice.

H(6) There is no significant difference in student persistence among students classified by their assigned instrument.

All fifteen instruments are represented in Table 14 although there is only one each of oboe and bassoon. Not counting the single oboe player, the mean persistence ranged from 21.14 months for the bass players to 47.46 months for the flute players. All of the woodwind sections except the oboe are above the total mean. All of the strings are well below the total mean except the viola section which is above. There is a greater difference among means when persistence rather than restricted persistence is the criterion. The F ratios approach significance but do not rise to an acceptable level of

Table 14. Mean persistence and restricted persistence of students classed by instrument and instrument family as assigned.

Assigned Instrument	N	Persistence		Restricted Persis.		N	Persistence		Restricted Persis.	
		Mean	s	Mean	s		Mean	s	Mean	s
Flute	13	47.462	12.214	23.846	0.533	64	34.766	19.000	20.250	6.683
Oboe	1	18.000	0.000	18.000	0.000					
Clar.	37	29.622	18.774	18.838	7.284					
Bssn.	1	39.000	0.000	24.000	0.000					
Sax.	12	37.917	19.645	20.583	7.239					
Trpt.	20	29.200	22.849	17.100	7.300	51	29.549	23.112	16.667	8.055
Horn	10	26.400	18.348	17.500	7.839					
Trom.	13	29.077	24.914	14.846	9.071					
Bari.	4	34.750	28.856	15.250	9.311					
Tuba	4	35.500	20.500	19.750	5.309					
Drums	13	26.692	13.769	19.923	5.427	13	26.692	13.769	19.923	5.427
Violin	38	24.553	16.016	17.368	7.788	72	25.139	15.857	17.653	7.858
Viola	14	31.714	12.881	21.429	6.310					
Cello	13	21.923	18.441	14.385	8.775					
Bass	7	21.143	10.343	17.714	5.873					
Total	200	29.445	19.256	18.380	7.563	200	29.445	19.256	18.380	7.563
	F =	1.5879		1.4717			2.9904		2.6293	adjusted 2.8448
	P =	.09		.13			.03		.05	.04

confidence.

When the instruments are regrouped on the right side of Table 14 into families, the means are very similar to those in Table 13 in which the students are classed by the family of their choice. The greatest change occurred in the percussion family. The 24 students who asked for drums had a considerably lower mean persistence than did the 13 students who received drums. Within Table 14, the woodwind family have the highest mean for both persistence and restricted persistence. The fact that for the brass family the mean is next to the highest for persistence but drops to the lowest for restricted persistence indicates that a few players persisted for a very long time and therefore brought the mean well above the median. Persistence again yields a slightly higher F ratio than does restricted persistence. All of the F ratios for the assigned instrument families are significant at the .05 level of confidence. The alternative hypothesis H(6) is thus rejected when students are classed according to the family of their assigned instrument.

Minor Hypotheses

H(7) There is no significant difference in student persistence among male and female students in instrument assignment categories A, B, or C.

Table 15 shows the mean persistence of students classified by sex and instrument assignment category. It can be seen that there

Table 15. Mean persistence of students classed by assignment category and sex.

		Male			Female			Total	
Category	N	Mean	s	N	Mean	s	N	Mean	s
A	31	36.774	19.221	31	27.258	17.899	62	32.016	19.172
B	33	25.212	19.662	26	32.846	18.600	59	28.576	19.572
C	44	29.864	20.407	35	25.829	16.500	79	28.076	18.883
Total	108	30.426	20.343	92	28.293	17.828	200	29.445	19.256

F = 3.148

P = .05

Table 16. Mean restricted persistence of students classed by assignment category and sex.

Category	Male			Female			Total		
	N	Mean	s	N	Mean	s	N	Mean	s
A	31	20.581	6.100	31	18.613	6.950	62	19.597	6.612
B	33	16.879	8.311	26	19.846	6.871	59	18.186	7.849
C	44	17.409	8.105	35	17.771	7.601	79	17.570	7.914
Total	108	18.157	7.827	92	18.641	7.232	200	18.380	7.563

		adjusted
F =	1.5961	1.3195
P =	.21	.27

is a large difference between sexes when the assignment category is taken into consideration. The highest mean is for boys who received the instrument of their choice (A category), and the lowest mean is for boys receiving their second or third choice (B category). It is interesting to note that among the girls, the B category has the highest mean persistence. The F ratio reached indicates that the differences are significant at the .05 level of confidence.

As Table 16 shows, the differences are less when persistence is restricted to two years. The order, however, remains the same. The boys receiving their first choice and the girls receiving their second or third choice have the highest means. Since the range of means is greater for boys, it appears that assignment category had a greater affect on them than it did on girls. Neither the unadjusted nor the adjusted F ratio were found to be significant. The minor hypothesis H(7) is therefore not rejected for the criterion of restricted persistence.

H(8) There is no significant difference in student persistence among students entering MELAB at age eleven, twelve, or thirteen in instrument assignment categories A, B, or C.

Table 17 shows the students classed by assignment category and age at entry into MELAB with persistence as the criterion. Since for age thirteen there is only one subject in two of the cells, these results must be treated with caution. There is little difference

Table 17. Mean persistence of students classed by assignment category and age at entry into MELAB.

	Age 11			Age 12			Age 13			Total		
Category	*N*	Mean	*s*	*N*	Mean	*s*	*N*	Mean	*s*	*N*	Mean	*s*
A	19	30.632	18.033	42	31.929	19.319	1	62.000	0.000	62	32.016	19.172
B	22	27.682	14.892	36	29.250	22.153	1	24.000	0.000	59	28.576	19.572
C	34	32.941	17.969	42	25.571	18.835	3	8.000	2.160	79	28.076	18.883
Total	75	30.813	17.284	120	28.900	20.227	5	22.000	21.005	200	29.445	19.256

$F = 1.8843$ $P = .11$

Table 18. Mean *restricted* persistence of students classed by assignment category and age at entry into MELAB.

	Age 11			Age 12			Age 13			Total		
Category	*N*	Mean	*s*	*N*	Mean	*s*	*N*	Mean	*s*	*N*	Mean	*s*
A	19	19.053	6.533	42	19.738	6.680	1	24.000	0.000	62	19.597	6.612
B	22	19.409	6.692	36	17.278	8.422	1	24.000	0.000	59	18.186	7.849
C	34	19.882	6.986	42	16.381	8.103	3	8.000	2.160	79	17.570	7.941
Total	75	19.533	6.794	120	17.823	7.873	5	14.400	8.015	200	18.380	7.563

		adjusted
F =	1.7874	1.5928
P =	.13	.18

between eleven and twelve year old students receiving one of their choices (A or B category). In C category, however, there is a marked difference; the students entering at age eleven persisting on the average about seven months longer than students entering MELAB at twelve years of age.

With a criterion of restricted persistence (Table 18), the results are similar. Assignment category seemed to have very little effect on the mean restricted persistence for students entering at age eleven. Students entering at age twelve were affected by assignment category since twelve year old C category students did not persist as long as the A or B category students. The F ratios approach significance, but none are high enough to permit the minor hypothesis H(8) to be rejected.

H(9) There is no significant difference in student persistence among students entering MELAB at three different levels of previous musical training and in instrument assignment categories A, B, or C.

Tables 19 and 20 show the students classed by assignment category and previous training with criteria of persistence and restricted persistence respectively. All of the cells in this classification have an acceptable number of subjects, the Ns ranging from 14 to 37. A very definite trend appears here. Students with no previous training who received an instrument of their choice (A or B category) have means near the total mean, but students with no previous training

Table 19. Mean persistence of students classed by assignment category and three levels of previous musical training.

Cat-egory	None			1 to 2 Years			3 to 6 Years			Total		
	N	Mean	*s*	*N*	Mean	*s*	*N*	Mean	*s*	*N*	Mean	*s*
A	24	32.167	20.842	17	36.706	16.778	21	28.048	18.091	62	32.016	19.172
B	26	27.269	19.396	14	23.786	17.993	19	33.895	19.713	59	28.576	19.572
C	37	22.378	17.734	22	30.909	20.145	20	35.500	16.008	79	28.076	18.883
Total	87	26.540	19.552	53	30.887	19.195	60	32.383	18.264	200	29.445	19.256

F = 1.9560 *P* = .10

Table 20. Mean *restricted* persistence of students classed by assignment category and three levels of previous musical training.

	None			1 to 2 Years			3 to 6 Years			Total		
Category	N	Mean	s	N	Mean	s	N	Mean	s	N	Mean	s
A	24	18.833	7.422	17	22.118	3.649	21	18.429	6.918	62	19.597	6.612
B	26	18.192	7.641	14	16.000	8.660	19	19.789	7.075	59	18.186	7.849
C	37	15.189	8.288	22	17.864	7.354	20	21.650	5.790	57	17.570	7.914
Total	87	17.092	8.042	53	18.736	7.245	60	19.933	6.750	200	18.380	7.563

		adjusted
F =	2.4833	2.7224
P =	.05	.03

who did not receive an instrument of their choice (C category) have a very low mean: i. e., about seven months below the total mean persistence. Students with one or two years of previous training had a very high mean if they were in category A, but had a very low mean if they were in category B. Students with three or more years of training had means for all three categories near or above the total mean. The students with the most previous training (three to six years) appeared to persist longer if they received an instrument other than their first choice.

These trends are the same for both persistence and restricted persistence. The differences however are slightly greater for restricted persistence, with an adjustment for pitch scores increasing that difference. The F ratio reaches significance at the .05 level of confidence when restricted persistence is the criterion. The minor hypothesis H(9) is therefore rejected.

H(10) There is no significant difference in student persistence among students classified by instrument family of their first choice and their instrument assignment category.

Tables 21 and 22 show the students classed by instrument assignment category and their first choice instrument family. Students who asked for woodwind instruments had a high mean whether or not they received the instrument of their choice. Students choosing brass instruments had means near the total mean if they received one of

Table 21. Mean persistence of students classed by assignment category and instrument family of their first choice.

Family of Choice	Category A			Category B			Category C			Total		
	N	Mean	s	N	Mean	s	N	Mean	s	N	Mean	s
Wdwd.	26	38.808	18.130	28	32.357	17.843	37	32.270	17.921	91	34.165	18.196
Brass	19	32.000	22.736	15	29.067	22.293	28	22.964	18.331	62	27.210	21.129
Drums	8	20.125	9.413	6	29.000	21.656	10	21.400	18.101	24	22.875	17.208
Strings	9	23.000	8.498	10	17.000	12.931	4	41.750	16.006	23	23.652	14.896
Total	62	32.016	19.172	59	28.576	19.572	79	28.076	18.883	200	29.445	19.256

$\underline{F} = 1.4314$ $\underline{P} = .20$

Table 22. Mean restricted persistence of students classed by assignment category and instrument family of their first choice.

Family of Choice	Category A			Category B			Category C			Total		
	N	Mean	*s*	*N*	Mean	*s*	*N*	Mean	*s*	*N*	Mean	*s*
Wdwd.	26	21.346	5.890	28	20.357	6.001	37	19.514	7.354	91	20.297	6.599
Brass	19	17.842	7.673	15	17.533	8.098	28	15.321	8.009	62	16.629	8.019
Drums	8	17.375	5.566	6	17.333	9.446	10	14.700	8.137	24	16.250	7.870
Strings	9	20.222	5.391	10	13.600	8.686	4	22.500	2.598	23	17.739	7.691
Total	62	19.597	6.612	59	18.186	7.849	79	17.570	7.914	200	18.380	7.563

		adjusted
F =	1.0149	1.2473
P =	.42	.28

their three choices, but had a low mean if they received some other instrument (C category). The order of the means for students choosing drums changed considerably from persistence to restricted persistence. For both criteria, however, students choosing drums but receiving an instrument other than one of their three choices had a low mean persistence. Students who asked for strings and received a second or third choice had a very low mean persistence and restricted persistence. Since none of the differences were found to be significant, the minor hypothesis H(10) is not rejected.

H(11) There is no significant difference in student persistence among students classified by family of the assigned instrument and instrument assignment category.

Tables 23 and 24 show the students classed by assignment category and the assigned instrument family. Generally, students who received the instrument of their first choice had the highest means. The exception to this was the drum section in which the five drummers who had not asked for drums as a first choice all persisted for more than two years. The highest mean persistence and restricted persistence (not counting cells with less than five subjects) was attained by A category woodwind students. The drummers in category A had the lowest mean with the criterion of persistence. With restricted persistence, the lowest means were those of brass players who did not receive their first choice (B and C categories). Since none of the

Table 23. Mean persistence of students classed by assignment category and family of the assigned instrument.

Family Assigned	Category A			Category B			Category C			Total		
	N	Mean	*s*	*N*	Mean	*s*	*N*	Mean	*s*	*N*	Mean	*s*
Wdwd.	26	38.808	18.130	19	27.526	17.590	19	36.474	19.470	64	34.766	19.000
Brass	19	32.000	22.736	20	28.250	23.960	12	27.833	21.901	51	29.549	23.112
Drums	8	20.125	9.413	3	35.667	16.499	2	39.500	3.500	13	26.692	13.769
Strings	9	23.000	8.498	17	28.882	15.807	46	24.174	16.736	72	25.139	15.857
Total	62	32.106	19.172	59	28.576	19.572	79	28.076	18.883	200	29.445	19.256

$F = 1.2411$ $P = .29$

Table 24. Mean restricted persistence of students classed by assignment category and family of the assigned instrument.

Family Assigned	Category A			Category B			Category C			Total		
	N	Mean	s	N	Mean	s	N	Mean	s	N	Mean	s
Wdwd.	26	21.346	5.890	19	18.684	7.834	19	20.316	6.122	64	20.250	6.683
Brass	19	17.842	7.673	20	16.050	7.959	12	15.833	8.572	51	16.667	8.055
Drums	8	17.375	5.566	3	24.000	0.000	2	24.000	0.000	13	19.923	5.427
Strings	9	20.222	5.391	17	19.118	7.630	46	16.609	8.141	72	17.653	7.858
Total	62	19.597	6.612	59	18.186	7.849	79	17.570	7.914	200	18.380	7.563

		adjusted
F =	0.9198	0.9611
P =	.48	.45

differences approach significance, the minor hypothesis H(11) is not rejected.

Second-Order Interaction

One three-way analysis was possible. This was among assignment category, sex, and three levels of previous musical training. Preliminary to this, a check for first-order interaction between sex and previous training was done. Virtually no difference in mean persistence or restricted persistence was found in this interaction. An F ratio of 0.3726 (P = .69) was found with persistence as the criterion and an F ratio of 0.4283 (P = .65) with restricted persistence the criterion.

The differences also were not significant for the second-order interaction among assignment category, sex, and previous training. When total persistence was the criterion, the F ratio was 0.5375 (P = .71). When restricted persistence was used as the criterion, the F ratio decreased to 0.2107 (P = .93).

2. RESULTS OF PART II

The results of the interviews in Part II are dealt with question by question. Tables are used to display those analyses which can best be presented in that manner. Where possible, the chi-square test is used to determine significance which is set at $\underline{P} \leqq .05$. Probability refers to the chance that the value of χ^2 could have equalled zero.

Q(1) On what bases do the students make their initial choice of instruments?

Question 1. Before entering MELAB, how familiar were you with the orchestral instruments?

In Question 1 the students were rated on a five-point scale, "one" meaning totally unfamiliar and "five" meaning very familiar. The distribution was as follows:

one - 1 two - 25 three - 18 four - 14 five - 1

The individual's placement on the scale was mainly dependent upon his initial answer to the question. Typical first answers were: "knew some but not all;" "just knew the more popular ones;" "learned the names at school but didn't know anything about how they played;" "learned about strings in school." It was found however that the individual's personal judgement about how much he knew did not always seem related to the actual information which he had possessed. For example in one case where a student had answered that he was

fairly familiar with the instruments, he went on to explain that he actually just knew something about the trumpet, drum, and saxophone. In a second case, in which the student answered that he knew very little about the instruments, he went on to explain that he knew all of the names and sounds of the instruments but was not certain about how some of them were played. It seemed that some students knew so little that they did not realize that there was very much to learn. Other students knew enough to realize that there was much more for them to learn.

Although some students were very free with comment and explanation, many answered the questions as simply as possible. Where no comment was offered, it was impossible to rate the student on the five-point scale with any kind of reliability or accuracy. This rating therefore can only serve as a very general guide. An elaborate multi-media test administered at the time of student selection would be necessary to properly answer the first question.

In an attempt to determine the source of the students' knowledge of musical instruments, the following question was asked: "From where did you learn about the instruments?" The responses in order of their frequency are as follows:

1.	school	29
2.	private music instruction	18
3.	band or orchestra concerts	16
4.	home (immediate family)	10
5.	television, radio, records	8
6.	in-school concerts	5
7.	friends or relatives	3
8.	books	2
9.	music festivals	1
	Total	92

Twenty-nine of the 59 students interviewed included school as a place where something about the instruments was learned. Since "instruments of the orchestra" is a part of the elementary music curriculum for the Province of Alberta, school should have been listed in close to 100 per cent of responses rather than the 49 per cent that it was. Ten of the 29 students who included school added that they learned the names of the instruments but not the sounds. Four students said that they learned only about the strings in school. Two students had not taken anything about the instruments since primary school, and five students said that they had learned nothing in school about the instruments.

Eighteen of the students mentioned private lessons as a source of information about musical instruments. The instruments most frequently mentioned were piano, accordian, and guitar. Since these instruments are not offered at MELAB, the influence of private instruction in the choice of a band or orchestra instrument was probably not great.

Sixteen students felt that they had learned about the instruments from attendance at concerts. Both symphony orchestra and band concerts were given as the type of concert attended. One student commented that he had been to symphony concerts but did not think that he had learned about the instruments at these concerts. Seven (35 per cent) of the string students specifically mentioned symphony concerts whereas only five (13 per cent) of the band students mentioned symphony concerts.

Ten students mentioned their home as a place where they learned about the instruments, usually from a brother or sister who participated in a band. Four students said that they learned from parents who played an instrument.

Eight students mentioned television, radio, or records as a source of information about the instruments. In all but one case the students were referring to popular instruments played by popular performers such as Al Hirt and Herb Alpert. The one exception was a boy from the beginning string orchestra who listened to symphony concerts on the radio.

Five students mentioned in-school concerts as a source of knowledge about the instruments. This was in reference to the thirteen-piece demonstration orchestra from the Edmonton Symphony which tours a selected number of elementary schools each year. A string quartet, woodwind quintet, brass quintet, and percussion

quartet all composed of Edmonton Symphony musicians also tour the junior high schools. Unfortunately, since the students enter MELAB in grade seven, they would not as yet have had the opportunity to hear these smaller instrumental ensembles.

In Question 9, the students were asked for their present first choice of instruments. Of the 57 students who had made an original choice, 25 re-chose that instrument and 32 chose an instrument different from their original first choice. Table 25 shows the distribution of these two groups over the five-point scale of familiarity of Question 1. Although no clear trend is apparent, the new choice of students with a familiarity rating of "three" generally was not consistent, whereas the new choice of those with a rating of "four" generally was consistent with their original choice.

Question 2. Do you think that you had an adequate enough understanding of the instruments to make an intelligent choice?

Question 2 was asked to determine whether or not the students felt that they were qualified to make this decision. Almost all of the answers were simply "yes" or "no." Thirty-five (59 per cent) of the 59 students answered "yes," and 29 (41 per cent) of the students answered "no."

Since the answers to Questions 1 and 2 are both expressions of the students' opinions of their familiarity with the instruments, the answers should be related. It would seem logical to expect that those

Table 25. Distribution of students according to the comparison of their new choice with their original choice and by their instrument familiarity rating.

New First Choice	Familiarity Rating					Total
	one	two	three	four	five	
Same	0	11	4	10	0	25
Different	1	13	13	4	1	32
Total	1	24	17	14	1	57

Note.--Two of the 59 students interviewed had not given any preference in their original application or interview and are therefore not included in those tables which require a direct comparison with the original first choice.

Table 26. Distribution of students according to their instrument familiarity rating and whether or not they felt prepared to make their original choice.

Prepared?	Familiarity Rating					Total
	one	two	three	four	five	
Yes	0	13	9	12	1	35
No	1	12	9	2	0	24
Total	1	25	18	14	1	59

students who considered themselves to be familiar with the instruments would also consider themselves prepared to make an intelligent choice, and vice versa. As Table 26 shows, this is true for those students who rated in the two categories of greatest familiarity. In those categories ("four" and "five") 13 of the 15 students felt that they were prepared to make an intelligent decision. The opposite, however, did not hold true. Of the students in the first three categories (less familiar), 22 answered "yes" and the same number answered "no." To half of the students in the first three categories, it was apparently not necessary to be familiar with the instruments in order to make an intelligent decision.

In Question 9 the students were asked for their present first choice of instruments. Since students answering "yes" to Question 2 felt that they were adequately prepared to make their original choice, it would seem logical to expect that their choice should remain consistent. Table 27 shows the distribution of the students according to their new choice, compared to their original choice, and their answer to Question 2. It can be seen that there is very little change in distribution of "yes" and "no" among the three categories derived from Question 9. There is actually a higher percentage of "no" (44 per cent) among students who chose the same instrument than those who chose a different one (38 per cent). A "yes" answer to Question 2 did not assure any continuity of choice.

Table 27. Distribution of students according to their new choice of instrument as compared to their original choice and whether or not they felt prepared to make that original choice.

Prepared?	New Choice Compared to Original same	 second or third choice	 different	Total
Yes	14 (14.9)	10 (9.5)	10 (9.5)	34
No	11 (10.1)	6 (6.5)	6 (6.5)	23
Total	25	16	16	57

$\chi^2 = 0.246$ df = 2   P = .88

Table 28. Distribution of students according to their instrument assignment category and whether or not they felt prepared to make their original choice.

Prepared?	Assignment Category A	 B	 C	Total
Yes	12 (11.6)	12 (11.6)	12 (12.8)	36
No	7 (7.4)	7 (7.4)	9 (8.2)	23
Total	19	19	21	59

$\chi^2 = 0.206$ df = 2   P = .90

Note.--For all tables in which chi square is calculated, the expected fequency is shown in parentheses to the right of the actual frequency of response.

In an attempt to check for bias resulting from the instrument assignment, the responses to Question 2 were distributed according to instrument assignment category. Table 28 shows this distribution and the resulting chi square. The fact that the distribution is almost even and chi square approaches zero, indicates that instrument assignment category did not affect student response to Question 2.

One of the few students to comment on Question 2 said, "Yes, I wanted the clarinet." The reason he thought that he had an understanding of the instruments adequate to make an intelligent choice was that he knew what he wanted. There is no way of knowing how many other students answering "yes" felt the same way.

Question 3. Before you came to MELAB, had you any ideas about what instrument you wanted to learn to play?

Of the 59 students interviewed, only 4 indicated that they had not known what they wanted to play. Thirty-seven students said that they decided only just before coming to MELAB. Eighteen (31 per cent) of the students had known what they wanted to learn for at least six months.

The students who answered "yes" to Question 3 indicated the following ideas about what they wanted to learn:

1. a specific orchestral instrument	40
2. an instrument from a particular instrument family	8
3. any of the popular band instruments	7
Total	55

Most often, the responses referred to one instrument in particular. The eight students comprising the next most common response were either interested in a family (e. g., strings), or two or more instruments from a family (e. g., flute or clarinet). Seven students wanted any one of the popular instruments or stated their interest to be in at least two of the popular instruments. Students giving just one of these are included in the first category. Forty (68 per cent) of the students interviewed had a specific instrument in mind when they were asked for a choice. Only 31 per cent, however, had decided much in advance of coming to MELAB.

As in the first two questions, it seems logical to compare Question 3 with Question 9, in this case to see if the new choice of instruments was affected by the length of time that the student had wanted his original choice. Table 29 shows the distribution of students according to their new choice and whether or not their original choice had been decided at least six months before first coming to MELAB. Since the distribution is very close to the expected chance distribution, it is apparent that the length of time that students wanted an instrument did not affect the probability that they maintained that choice.

Question 4. What made you decide to choose the instrument of your first choice?

This question was asked in an attempt to learn the main sources of influence in the students' choice of instruments. Seven

Table 29. Distribution of students according to their new choice of instrument as compared to their original choice and the length of time before coming to MELAB that they had made their original choice.

How Long Before?	New Choice Compared to Original			Total
	same	second or third choice	different	
At least 6 months	8 (8.0)	6 (4.7)	4 (5.3)	18
Just before	16 (16.0)	8 (9.3)	12 (10.7)	36
Total	24	14	16	54[a]

$\chi^2 = 1.071$ $\underline{df} = 2$ $\underline{P} = .59$

[a] Four students did not have any ideas about what they wanted to play before coming to MELAB. One other student had no original choice with which to make the comparison used in this table.

students simply stated that they did not know why they decided upon the instrument of their first choice. The rest of the students gave at least one of the following reasons:

1.	liked the sound	28
2.	knew someone else who played it	13
3.	heard it a lot (T. V., radio, records, and concerts)	11
4.	knew more about it than the others	9
5.	liked the type of music associated with it	6
6.	it seemed easy to play	5
7.	suggested by parents	5
8.	looked interesting	3
9.	nice sized instrument	3
10.	dental reasons	3
11.	others	8
	Total	94

The most popular response "liked the sound" was usually the most spontaneous. Students who stated, "I just like it," are also included in the first response although most of the 28 students listed there did say that it was the sound or tone that they liked. This response was not peculiar to any one instrument but was most often in reference to a trumpet, saxophone, or oboe. None of the students choosing drums said that they liked the sound of that instrument.

The second, third, fourth, and fifth responses are similar in that they indicate that the student chose an instrument with which he was particularly familiar. The second response ("knew someone else who played it") usually referred to a brother or sister or less often to a parent or friend. This response was most common among string students who very often were in a family of string players. The third

response ("had heard it a lot") was usually in reference to one of the popular instruments. The fourth response ("knew more about it") was often in conjunction with the second response, although in two cases the influence was school. The fifth most frequent response ("liked the type of music associated with it") came from two diverse tastes in music. Two students choosing strings and one choosing flute preferred classical music. Two students chose the saxophone and one chose the trumpet because they liked jazz or popular music.

The five students who chose an instrument because it seemed "easy to play" asked for a trumpet (two students), trombone, saxophone, and drum. One of the students choosing trumpet, the one choosing trombone, and the one choosing drums had tried these instruments before. The other two students had not tried the trumpet or saxophone but thought they "looked easy to play."

The instruments suggested by parents were violin (twice), trumpet (twice), and clarinet. The three instruments that were chosen at least partly because they "looked interesting" were the flute, horn, and drums. The three "nice sized instruments" were flute, violin, and trumpet. The "dental reasons" that influenced the choice on instrument were braces and crooked teeth. A girl wearing braces decided to try for a clarinet because she thought that she would not be able to play a brass instrument. One boy chose horn but did not expect to receive this instrument because he had crooked teeth. Another boy thought

that he should try the trumpet because he had even teeth.

Single responses which made up the "other" responses were mainly from students choosing drums for the following reasons: "could play in a combo," "have good rhythm," "could keep the beats," "can do things other instruments can't do," and, "makes lots of noise." One girl chose the flute because it was quiet and would be good for practicing in an apartment. One student chose the oboe because he had just seen and heard it demonstrated and it was the first instrument that came to his mind. Another student chose the trumpet because he thought it looked nice, but then he added, "I didn't know too much."

The frequency of instruments as they were indicated for a first choice is as follows: trumpet--11, clarinet--11, drums--9, saxophone--8, violin--8, flute--3, oboe--2, double bass--2, horn--1, trombone--1, and 'cello--1. The bassoon, baritone, tuba, and viola were not chosen by any of the students as a first choice. As would be expected the trumpet, clarinet, and violin--those instruments normally considered to be solo and melody instruments, along with the two instruments associated with modern popular music--saxophone and drums, are the most frequently chosen instruments. The other instruments, either less popular treble instruments or those instruments too often hidden in the harmony parts, are very poorly represented or ignored by the students as a first choice.

Q(2) How do the students react to their assigned instruments?

Question 5. Are you happy playing the instrument you received?

To this question 50 students answered "yes" and only 9 answered "no." There was almost no comment, but there was occasional qualification. For example, one student answered, "Yes, in a way," and another, "No, not really."

Table 30 shows the distribution of the "yes" and "no" answers to Question 5 classed by the instrument received and instrument assignment category. It is interesting to note that none of the 19 students who received the instrument that they asked for (category A) responded "no" to Question 5. Unfortunately the small number (nine) of "no" answers prohibits a calculation of statistical significance from this distribution.

Four of the 19 students in category B answered "no" and 5 of the 21 students in category C did the same. It seems that students who received an instrument other than one of their choices were just as happy with the instrument that they were assigned as the students who received a second or third choice instrument.

An inspection of Table 30 reveals a bias among instruments and assignment categories. There are 19 students in category A, 19 in B, and 21 in C. However, the distribution for woodwinds is 8 in A, 8 in B, and 2 in C; for brasses it is 3 in A, 6 in B, and 8 in C; for

Table 30. Distribution of students' answers to Question 5--Are you happy playing the instrument you received? --according to assigned instrument and instrument assignment category.

	Happy with instr. received?	Assigned Instrument												Totals	
		flute	clar	trpt	horn	trom	bari	tuba	drum	vln	vla	cello	bass		
Category A	Yes	2	6	2	0	1	0	0	3	3	1	0	1	19	19
	No	0	0	0	0	0	0	0	0	0	0	0	0	0	
Category B	Yes	1	6	1	1	1	0	1	1	1	2	0	0	15	19
	No	0	1	0	2	0	0	0	0	0	0	1	0	4	
Category C	Yes	0	1	0	1	2	1	2	0	4	2	2	1	16	21
	No	0	1	1	0	1	0	0	0	1	1	0	0	5	
all Categories	Yes	3	13	3	2	4	1	3	4	8	5	2	2	50	59
	No	0	2	1	2	1	0	0	0	1	1	1	0	9	
Total		3	15	4	4	5	1	3	4	9	6	3	2	59	

strings it is 5 in A, 4 in B, and 11 in C. The drummers are all in category A and category B.

This bias of instrumentation in the instrument assignment categories, however seems to have very little effect on the answers to interview Question 5. The distribution of those answers according to assigned instrument families is shown in Table 31. Despite the fact that the strings have a much higher percentage of students who received an instrument other than one of their choices, the number of string students saying that they were happy with their instrument is equal to chance expectation.

Table 31. Distribution of the answer to Question 5--Are you happy with the instrument you received? --according to assigned instrument families.

Instrument Family	Happy with Assignment?		
	yes	no	Total
Woodwind	16	2	18
Brass	13	4	17
Drums	4	0	4
Strings	17	3	20
Total	50	9	59

Question 6. What do you like most about the instrument you received?

Table 32 shows the frequency of responses to Question 6. Three students said there was nothing that they liked about the instrument they received. All three had answered "no" to Question 5, indicating that they were unhappy with that instrument. Two of these students are in assignment category B, and one is in category C. Of the 59 students, these three were the only ones who were adamant in not liking their instruments. They were very ready with answers to Question 8, "What do you dislike about your assigned instrument?"

Not counting the "nothing" replies, the 59 students gave 107 responses to Question 6. The most common response was, "It has a nice sound." Although this statement was not peculiar to any one instrument, the flutes were the only section which gave it unanimously. and the drums were the only section which avoided it unanimously. One violinist qualified his statement by saying he liked the sound but added, "when it is in tune."

The next most common response was, "It is easy to play." The 23 students giving this response represent at least one of each instruments except drums and viola. It is interesting to note that even instruments such as the horn and trombone, which are often considered to be difficult to learn, are included. Surprisingly, since drums are often considered the simplest instrument to learn, none of the drummers included this response. The baritone, tuba, 'cello,

Table 32. Distribution by assigned instrument of the responses to Question 6--What do you like most about your assigned instrument?

Response	flute N=3	clar N=15	trpt N=4	horn N=4	trom N=5	bari N=1	tuba N=3	drum N=4	vln N=9	vla N=6	cello N=3	bass N=2	Total N=59
Nothing				1						1	1		3
Nice sound	3	6	2	3	1	1	2		6	3	2	1	30
Easy to play	1	9	2	1	2	1	2		2		2	1	23
Enjoy playing it (fun)		2	1	1	1			4		1		1	11
Good pitch or range		5	1		1					3			10
Good parts (music)		1			1				3	1		1	7
Convenient size	2	2							1				5
Nice looking	1	2											3
Know how to play it					1				1			1	3
Challenging		1		1					1				3
Versatile		2	1										3
Others	2	3	1				1	1	1				9
Total	9	33	8	6	7	2	5	5	15	8	4	5	107
Average	3.0	2.2	2.0	1.5	1.4	2.0	1.7	1.3	1.7	1.3	1.3	2.5	1.8

and clarinet sections had the highest percentage of students give this response.

Eleven students answered Question 6 with, "I enjoy playing it," or "It's fun to play." Although altogether the four drummers only made five responses, they were unanimous in responding to this one. The "fun" expressed here seemed to be a physical pleasure in playing the instrument, especially the drums. One clarinet player said that he liked to blow on the mouthpiece.

Ten students liked the pitch or range of their instrument. The violists who gave this response liked the lower tones of a viola because they were not as harsh as the violin. One girl said that she liked the viola because it did not squeak as much as the violin. Students who were assigned the clarinet liked the low register of that instrument with the exception of one boy who particularly liked the high notes. He had an ally in a trumpet player who also liked to play high notes. One trombone player liked the "bass sound" of that instrument especially the pedal notes.

The violinists were the students who most often stated a liking for the part which they were required to play in an ensemble. Surprisingly, students playing the trombone, viola, and bass, instruments not noted for their melodious parts, also gave this response.

Most of the remaining responses in Table 32 are self-explanatory. One rather interesting and unexpected response which

was made three times was, "I know how to play it now." The three students making this response, one each from assignment category A, B, and C, felt that the familiarity and performance ability which they had gained increased their liking for the instrument they were assigned. Responses listed under "others" include a flute and a tuba player who liked their respective instruments because they are different and less common than most of the others. One student liked the clarinet because "it is healthy to blow," and another because it is a good instrument to learn before branching onto other woodwinds. One drummer liked the drums because they fit into a rock group.

Over all, the average number of responses was 1.8. The flute players were most vociferous with an average of 3.0 responses. Drum, viola, and 'cello players were the least responsive with an average of 1.3.

Table 33 shows the responses to interview Question 6 distributed according to instrument assignment category. There is very little difference for any of the responses with the exception of the response "good parts" (music). Of the seven students making this response, six were from category A and one was from category B. The fact that the students giving this response were from sections (violin, viola, bass, and trombone) having a fairly large percentage of B and C category students decreases the probability that this is a chance occurance. It is interesting to note that "good parts" was not

Table 33. Responses to Question 6 distributed according to assignment category.

Response	Assignment A N=19	Category B N=19	 C N=21	Total N=59
Nothing	0	2	1	3
Nice Sound	9	9	12	30
Easy to Play	6	8	9	23
Enjoy playing it (fun)	4	3	4	11
Good pitch or range	4	3	3	10
Good parts (music)	6	1	0	7
Convenient size	3	0	2	5
Nice looking	1	2	0	3
Know how to play it	1	1	1	3
Challenging	1	1	1	3
Versatile	2	1	0	3
Others	3	4	2	9
Total	40 (34.46)	33 (34.46)	34 (38.08)	107
Average	2.1	1.7	1.6	1.8

$\chi^2 = 1.390$ $\underline{df} = 2$ $\underline{P} = .50$

stated as one of the reasons for choosing an instrument.

Students in category A gave the greatest number of responses averaging 2.1, whereas C category students averaged only 1.6 responses. Table 33 shows the expected frequency of responses for each assignment category (in parentheses under the column totals) based on the assumption that assignment category does not affect the number of responses. The A category total is above and the C category total below their respective expected frequencies. Chi square, however, does not rise to significance.

Question 7. Are you interested in continuing to study the instrument you were assigned?

The answer to this question is probably a good indication of whether or not the student will persist in the program. There was very little comment to this question. One clarinetist answered, "Yes, as far as I can go." One 'cellist answered, "No, I have a slipped disc and it hurts my back to play." Other than these two, most students answered a simple "yes" or "no." Those students who answered "don't know yet" are included in the "no" category in the table. The answer of one boy, that it depended upon his parents, seemed to be in reference to the necessity of purchasing an instrument if he was to continue into the second year of MELAB training. Two other students also stated some concern over the purchase of an instrument.

Of the 59 students interviewed, 37 (63 per cent) were certain

that they wanted to continue on their assigned instrument. As would be expected, all of these students had answered "yes" to Question 5--Are you happy with the assigned instrument? Of the 22 students who answered "no" or "don't know," 13 had answered "yes" to Question 5. Only 6 of those 13, however, answered a definite "no" to Question 7, the other 7 students were "not sure." This could be interpreted to mean that at least six students who do not expect to continue on their assigned instrument do so for reasons other than a dislike of the instrument they received. The reason in at least one case seemed to be a desire to "try" another instrument.

The distribution of the answers to Question 7 according to instrument assignment category is shown on Table 34. The expected frequency, based on the assumption that instrument assignment category did not affect the students' decision to continue studying the instrument they received, appears in parentheses behind the actual frequency of the response. A very clear pattern is shown here. Those students receiving their first choice instrument (category A) answered "yes" more often than chance expectation. Students receiving a second or third choice instrument (category B) answered "yes" about as chance would predict. And, those students receiving an instrument other than one of their choices (category C) answered "yes" much less than chance expectation. Since the chi square resulting is significant at the .01 level, the assumption that assignment category did not affect

Table 34. Distribution by instrument assignment category of student response to Question 7--Are you interested in continuing to study the instrument you were assigned?

Intend to Continue?	Assignment Category A	B	C	Total
Yes	16 (11.9)	13 (11.9)	8 (13.2)	37
No	3 (7.1)	6 (7.1)	13 (7.8)	22
Total	19	19	21	59

$\chi^2 = 9.462$ df = 2 P = .01

Table 35. Distribution of student response to Question 7 classed by assigned instrument families.

Intend to Continue?	Assigned Instrument Family Woodwind	Brass	Percussion	String	Total
Yes	13 (11.3)	10 (10.7)	4 (2.5)	10 (12.5)	37
No	5 (6.7)	7 (6.3)	0 (1.5)	10 (7.5)	22
Total	18	17	4	20	59

$\chi^2 = 4.567$ df = 3 P = .21

the students' decision to continue is rejected.

The distribution of answers to Question 7 according to assigned instrument family is shown in Table 35. It appears that the woodwind and percussion families tended to produce the most persistent students (i. e., "yes" to Question 7). This difference in distribution, however, may be explained by a bias in instrument assignment categories. Only 2 (11 per cent) of the woodwind players are in category C, whereas 11 (55 per cent) of the strings are in that category. Eight (47 per cent) of the brass players but none of the drummers fall into this category. Since 59 per cent of the "no" answers come from the C category, the distribution by instrument family is about as could be expected allowing for the difference in instrument assignment category. The results of the chi-square test are not significant.

Question 8. What do you dislike most about the assigned instrument?

The distribution of responses to Question 8 appears in Table 36. There were only 54 responses to Question 8 compared to the 106 responses to Question 6--What do you like about your assigned instrument? Eighteen students could think of nothing that they did not like about their instrument.

The most common complaint had to do with the size or weight of the instrument. Nine string players including two violinists thought that their instruments were too big to conveniently carry around. The

Table 36. Distribution according to assigned instrument family of responses to Question 8--What do you dislike most about your assigned instrument?

	Assigned Instrument Family				
Response	Woodwind N=18	Brass N=17	Per. N=4	String N=20	Total N=59
Nothing	9	5	2	2	18
Size or weight		6		9	15
Method of playing	4	1		8	13
Difficult to play	3	2		2	7
Mechanical problems	2	3		1	6
Sound				5	5
Poor parts (music)		2	1		3
Others	1	2	2		5
Total	10	16	3	25	54
Average	0.56	0.95	0.75	1.25	0.92

six brass players with this complaint were one each of trumpet and tuba, and two each of horn and trombone. Surprisingly, since they play the heaviest instruments, the baritone player and two of the tuba players did not have this complaint. Since the percussionists do not bring their own equipment other than drumsticks to rehearsals, their lack of response to this "dislike" is understandable. That none of the woodwind players complained about the size of their instrument may be explained by the fact that the flute and clarinet, two of the smallest instruments of the orchestra, were the only woodwinds interviewed.

The second most common response had to do with the method of playing. Violin and viola players complained about sore wrists, arms, and necks. A bass player complained about not being able to sit down to play, and a 'cellist complained about not being able to play standing. Four clarinetists did not like to blow on the clarinet because it made their mouths sore. One of them claimed that he cut his tongue on the reed. Another thought that the vibrations loosened his teeth. One trumpet player complained about sore lips and cheeks from blowing the trumpet.

Seven students thought that their instrument was difficult to play. Three of these were clarinetists who had trouble getting some of the notes, especially the high ones. One clarinetist thought that he had "clumsy fingers." One student found the horn "hard to play." One tuba player felt that his instrument was difficult because it took a lot

of air. Two violinists thought it was difficult to finger high up on a string, and that it was "hard to tell what note you're on."

Mechanical problems with the instrument were most common among the brass players. One trumpet player complained about dents and slow valves. Two trombone players had trouble keeping their slides running smoothly. Two clarinetists complained about reeds breaking, and one of them also had pads which fell out regularly. The only mechanical problem in the strings was a 'cello which would not stay in tune.

String players were the only ones who complained about the sound they made on their instruments. Three violinists disliked the "squeaks" that sometimes happened. One violist and one 'cellist did not particularly like the sound they made.

One trombone player and one horn player complained about the lack of melody in their ensemble parts. One drummer thought that his parts in the band were too simple and too restrictive; he wanted to be able to improvise.

The other dislikes were a trumpet player who did not like to learn the names of the notes, a clarinetist who did not like to practice, a drummer who did not like to play softly in the band and one who thought that drums were too loud and noisy, and a trombone player who simply did not like the trombone.

The strings, averaging 1.25 responses to Question 8, were

by far the most vociferous in their dislikes. Only two of the 20 string players could think of nothing that they disliked about their instrument. Brass instrument players were the next most frequent in their dislikes, averaging just under one response. The drummers and woodwind players averaged less than one response. There were no "dislike" responses from the three flute players.

Table 37 shows the distribution of responses to Question 8 according to assignment category. To this question, students receiving an instrument other than one of their choices (category C) had the greatest frequency of response. The only single complaint having a disproportionate distribution among assignment categories was that of the "size or weight" of the instrument. That nine of these 15 responses came from the C category may be due to a preponderance of large instruments in that category. Category A students were more concerned with "mechanical problems" than were students from B or C categories. The totals show that B category students gave less whereas C category students gave more responses than would be expected in a chance distribution. These differences, however, are not significant.

It is interesting to note that although they were assigned the instrument of their first choice, it was not the A category students but the B category students who most often could think of nothing that they disliked about their assigned instrument.

Table 37. Responses to Question 8 distributed according to assignment category.

Response	Assignment Category A N=19	 B N=19	 C N=21	Total N=59
Nothing	4	11	3	18
Size or weight	3	3	9	15
Method of playing	4	3	6	13
Difficult to play	1	3	3	7
Mechanical problems	4	1	1	6
Sound	2	2	1	5
Poor parts (music)	1	1	1	3
Others	3	0	2	5
Total	18 (17.39)	13 (17.39)	23 (19.22)	54
Average	0.95	0.68	1.10	0.92

$\chi^2 = 1.873$ $df = 2$ $P = .39$

Q(3) Do the students' first choices remain consistent after they have received six months of instrumental training?

Question 9. What would now be your first choice of instruments?

The frequencies for the new choices of instruments are as follows (frequencies of the original choices are shown in parentheses): flute--2 (3), oboe--2 (2), clarinet--8 (11), saxophone--7 (8), trumpet--8 (11), horn--4 (1), trombone--4 (1), baritone--1 (0), tuba--2 (0), drums--11 (9), violin--5 (8), viola--1 (0), 'cello--3 (1), and bass--1 (2). The instrumentation of the new choice is better than the original choice. All of the instruments except the bassoon are now represented. In the lower-brass instruments, the new choices come almost exclusively from students who were assigned those instruments. Apparently they learned to like them. Most string players who did not choose the instrument they were assigned made a choice of a band instrument, most commonly the trumpet or drums. There was one switch from viola to violin and two from viola to 'cello. Students who originally asked for saxophone or drums tended to choose those instruments again.

There were 26 students who chose the instrument that they had received and of these 12 had received their first choice (category A). Twenty-five students asked for their original first choice. Sixteen students chose an original second or third choice as a new first choice, and 16 students chose an instrument other than one of their original

choices.

Table 38 shows the distribution of students according to instrument assignment category and whether or not their new choice was their assigned instrument. The expected frequency is shown in parentheses. The students in assignment category A more often chose the instrument that they were assigned than did students in categories B or C. The difference in distribution, however, is not great enough to reduce the probability of a chance occurrence to a significant level. The greatest deviation from the expected frequency is in the A category which contributes more than one-half to the total value of chi square.

Table 39 shows the distribution of students according to instrument assignment category and their new choice as it is compared to their original choice. This table shows a definite bias toward the instrument received. In the A category, 12 students chose their original first choice which was also the instrument they were assigned. In category B, ten students chose their second or third choice which was also the instrument assigned for seven of them. In the C category, six of the nine students choosing an instrument other than an original choice chose the instrument that they were assigned.

The probability (.01) of the chi-square value indicates that instrument assignment category significantly affected the students' new choices. Students in category A tended to keep their original

Table 38. Distribution by instrument assignment category of the new first choice compared with the assigned instrument.

Chose Instrument Assigned?	Assignment Category A	B	C	Total
Yes	12 (8.4)	7 (8.4)	7 (9. 3)	26
No	7 (10.6)	12 (10.6)	14 (11.7)	33
Total	19	19	21	59

$\chi^2 = 4.193$ df = 2   P = .12

Table 39. Distribution by assignment category of the new first choice compared to the original.

New Choice Compared to Original	Assignment Category A	B	C	Total
First	12 (7.9)	6 (8.3)	7 (8.8)	25
Second or third	2 (5.1)	10 (5.3)	6 (5.6)	16
Other	4 (5.1)	3 (5.3)	9 (5.6)	16
Total	18	19	20	57

$\chi^2 = 12.820$ df = 4   P = .01

choice. Students in category B tended to choose a previous second or third choice, particularly the choice which they received. The trend is less marked in category C, but there was a tendency for students to choose an instrument other than their original choices and particularly the instrument they were assigned.

Students in category A more often chose their original first choice than students in categories B or C. Students in category A also more often chose the instrument that they were assigned than students in the other categories. Since these instruments for students in category A are one and the same, the following questions arise: Do students choose this instrument because it was their original choice, because it was the instrument they were assigned, or because of interaction that appears when these are the same instrument?

Table 40 shows the B and C category students classed according to their new choice (same as original first choice, same as instrument assigned, or other than these). It can be seen from this table that there is no difference between B and C categories in the distribution of the new choice according to this classification. It can also be seen that an almost equal number of students chose the instrument assigned and the instrument of their original choice. If B and C catetory students who chose their original choice are added to those students who chose their assigned instrument, a comparison is possible with students in assignment category A. Table 41 gives this

Table 40. Distribution of B and C category students according to their new choice compared to their original choice and assigned instrument.

New Choice	Assignment Category B	Assignment Category C	Total
Original	6	7	13
Assigned	7	7	14
Other	6	7	13
Total	19	21	40

Table 41. Distribution according to assignment category of the new choice compared to the original choice or assigned instrument.

New Choice	Assignment Category A	Assignment Category B	Assignment Category C	Total
Original or assigned	12	13	14	39
Other	6	6	7	19
Total	18	19	21	58

comparison. Since distribution among assignment categories is even, apparently there was no interaction which caused students in A category to choose their original choice or assigned instrument at a rate different from students in B or C categories.

Fourteen of the students who answered "yes" to Question 7--Are you interested in continuing to study the instrument you were assigned? -- did not choose their assigned instrument in Question 9. This appears to be an inexplicable contradiction. A number of these students volunteered two choices (e. g., "the baritone or flute") of which the first one spoken was recorded as the new first choice, and the second was often the instrument assigned. Some students apparently just thought that they would try for something different if they had a new choice even though they indicated that they would like to continue on their assigned instrument.

There were three students from the "no" category of Question 7 who indicated in Question 9 that their new choice of instruments was the instrument that they were assigned. Two of these students, however, were "not sure" in answer to Question 7. The third student liked the assigned instrument but could not continue to play it for reasons of health.

CHAPTER V

SUMMARY AND DISCUSSION

1. SUMMARY

Problem and Design

The problem with which this study is concerned is whether student persistence is affected by the extent to which student preference is considered in the assignment of instruments. Three assignment categories were arbitrarily defined. Category A was made up of students receiving their first-choice instrument. Category B was made up of students receiving their second- or third-choice instrument. And, students who received an instrument other than one of their three choices were delegated to category C.

In Part I of the research, certain data were collected from the files of 200 students who joined MELAB in 1963, 1964, and 1965. These data included the sex, age, previous musical training, and Seashore pitch and tonal memory test scores of each subject; his choice of instruments and the instrument to which he was assigned; and his persistence. Eleven null hypotheses were formulated for testing the relationship between persistence and the categorical

variables. The major hypothesis, H(1), is that there is no significant difference in student persistence among instrument assignment categories. The five alternative hypotheses, H(2) to H(6), are that there is no significant difference in persistence among students classified according to sex, age, previous training, instrument chosen, or instrument assigned. The five minor hypotheses, H(7) to H(11), were tested for interaction between assignment category and each of the alternative variables.

Part II of the research involved interviews with 59 students who entered MELAB in 1969 and had completed approximately six months of training. The interview, which was a schedule of nine questions, was designed to answer the following:

Q(1) On what bases do the students make their initial choice of instruments?

Q(2) How do the students react to their assigned instrument?

Q(3) Do the students' first choices remain consistent after they have received six months of instrumental training?

A preliminary investigation was conducted to test the relationship between the Seashore test scores and persistence. A low but positive and significant correlation was found between pitch and persistence. No significant correlation was found between tonal memory and persistence. On the basis of this preliminary investigation, it was decided that subsequent tests for differences in categorical means should be adjusted for Seashore pitch scores.

Multiple linear regression was used in the analysis of Part I data. Where possible, the chi-square non-parametric statistic was used to determine the probability of the distribution of Part II data. For all analyses, significance was set at $\underline{P} \leqq .05$.

Findings

Major Hypothesis:

H(1) There is no significant difference in student persistence among instrument assignment categories.

This null hypothesis was not rejected. There was very little difference among categorical means for either persistence or restricted persistence.

Alternative Hypotheses:

H(2) There is no significant difference in student persistence between male and female students.

This null hypothesis was not rejected. There was no evidence to indicate that either total or restricted persistence was affected by the sex of the students.

H(3) There is no significant difference in student persistence among students entering MELAB at age eleven, twelve, or thirteen.

This null hypothesis was not rejected. The difference approached significance for restricted persistence; however, the very

unequal Ns made reliable interpretation impossible.

H(4) There is no significant difference in student persistence among students entering MELAB with different levels of previous musical training.

This null hypothesis was not rejected. The differences approached significance, but may have been partly accounted for by differences in pitch discrimination.

H(5) There is no significant difference in student persistence among students classified by the instrument of their first choice.

This null hypothesis was rejected. Significant differences were found when students were classed by the instrument of their first choice. Highly significant differences were found when students were classed by the instrument family of their first choice. This was true for both criteria. Students who asked for woodwinds and in particular the flute had a high mean persistence. Students who asked for drums had a low mean persistence.

H(6) There is no significant difference in student persistence among students classified by their assigned instrument.

This null hypothesis was rejected for students classed by assigned instrument families. Students who received woodwind instruments had a mean persistence well above the total mean. Students receiving brass instruments had the lowest mean restricted persistence. Differences among the individual instruments approached

significance. H(5) and H(6) are interrelated by the fact that the instruments chosen and assigned were the same in 31 per cent of the cases (A category students). It is interesting to note, however, that the instrument asked for accounted for a greater percentage of variance than did the instrument received.

Minor Hypotheses:

H(7) There is no significant difference in student persistence among male and female students in instrument assignment categories A, B, or C.

This null hypothesis was not rejected. Almost no interaction between sex and assignment category was found.

H(8) There is no significant difference in student persistence among students entering MELAB at age eleven, twelve, or thirteen in instrument assignment categories A, B, or C.

This null hypothesis was not rejected. The differences found approached significance; however, very unequal Ns made a reliable interpretation impossible.

H(9) There is no significant difference in student persistence among students entering MELAB at different levels of previous musical training and in instrument assignment categories A, B, or C.

This null hypothesis was rejected with a criterion of restricted persistence. The differences approached significance ($\underline{P} = .10$) when persistence was the criterion. There was a definite interaction between assignment category and previous training particularly in

category C. In this category, students with no previous training had a lower mean persistence and students with three to six years of previous training had a higher mean persistence than expected.

H(10) There is no significant difference in student persistence among students classified by instrument family of their first choice and their instrument assignment category.

This null hypothesis was not rejected. Interaction between students' choice of instrument family and assignment category was negligible.

H(11) There is no significant difference in student persistence among students classified by instrument family of the assigned instrument and instrument assignment category.

This null hypothesis was not rejected. There was almost no interaction between the assigned instrument family and instrument assignment category.

Experimental Questions:

Q(1) On what bases do the students make their initial choice of instruments?

Very few students thought that they had been very familiar with the instruments before they came to MELAB. Only one student was rated at the top of a five-point scale of familiarity. Most students rated at the lower end of the scale. Schools were by far the place most often mentioned for learning about the instruments. There were,

however, a number of deficiencies in the school learning situation, particularly with regard to the sound and sound production of the instruments.

The majority of students thought that they knew enough about the instruments to make an intelligent choice. This, however, showed little relationship to their admitted lack of knowledge about the instruments. Students who thought that they were ready to make an intelligent choice were found to be just as likely to change their mind about that choice as were the students who had not thought that they were ready.

Most students had one specific instrument in mind when they were asked what they wanted to learn, but this was not very often a long standing decision. The students tended to choose the instrument with which they were most familiar. The most common response given to the question "Why did you choose that instrument?" was, "I liked the sound of it."

Q(2) How do the students react to their assigned instruments?

Most students indicated that they were happy with their assigned instrument. Students who were unhappy with their assignment came from B and C categories only. There was a wide variety of responses indicating things that students liked about their instrument. The most common responses were: "it has a nice sound," or

"it is easy to play." It was found that instrument assignment category did not significantly affect these responses.

Sixty-three per cent of the students were certain that they would like to continue to study their assigned instrument. Assignment category was related to this decision. Students in category A more often, and those in category C less often, answered "yes" to this question than did students in category B.

The most frequent response to the question "What do you most dislike about your assigned instrument?" was "nothing." The most common answers to this question were complaints about the size or weight of the instrument, or the method of playing it. It was found that instrument assignment category did not significantly affect this response.

Q(3) Do the first choices of the students remain consistent after they have received six months of instrumental training?

Thirty-two (57 per cent) of the students changed their original choice. The largest single factor in this change was the assigned instrument. Students from all three categories tended to choose the instrument that they were assigned. B and C category students chose their assigned instrument as often as their original first choice.

2. CONCLUSIONS

The basic problem that was stated in Chapter I was: To what extent should student preference be considered in the assignment of instruments? A review of the literature dealing with this problem revealed both a disparity of solutions and a disregard for the results of empirical research particularly in the definition of criteria for instrument assignment. Such research indicates that the student's preference is not reliable as a guide to the instrument of best adaptation and--verified in the present study--that the student's preference does not remain constant. It was not surprising, therefore, to find that students who received the instrument of their choice did not remain in the MELAB program significantly longer than did students receiving other instruments.

The results of this study did, however, suggest that the assignment of instruments other than those preferred may be an important cause of dropouts that occur within the first few months of training. Three findings pointed to this. First, in the analysis of the data of Part I, the unadjusted $\underline{F}$ ratio increased when persistence was held to a maximum of two years. Although the $\underline{F}$ ratio was not found to be significant, this could be interpreted as meaning that there was a greater difference among assignment category means in the first two years of training than there was during later years. The second finding was in the analysis of the distribution of students from Part I

classified by assignment category and whether they completed the year of training or not (Tables 3-6, pp. 47-48). In the first year of training, more A category and fewer C category students than expected completed the year, which resulted in a chi-square value that approached significance (P = .11). In subsequent years, there was very little difference among assignment categories, and chi square approached zero. The third finding, derived from Part II, is the most conclusive. Here, the students were asked whether or not they expected to continue to study their assigned instrument. When the results of this inquiry were tested with chi square, a highly significant deviation from the expected distribution of responses was observed. In this finding, as in the other two, category A students more often, and category C students less often, persisted in the program.

The only significant differences in persistence that involved instrument assignment categories were found when C category students were classed by three levels of previous training. Here, the mean restricted persistence for students with no previous training was found to be considerably lower than the mean for students with three or more years of previous training. There was very little interaction in the A and B categories.

On the basis of these findings the following conclusions concerning the effects of the instrument assignment appear to be justified:

(1) Students who received their first choice of instruments

were more likely to complete the first year of training than were students who did not receive their first choice.

(2) Students who received an instrument other than one of their three choices and had no previous training were less likely to complete their first year than were students who received one of their choices or had at least three years of previous musical training.

(3) Students who did not receive their first choice but did complete the first year of training were as likely to persist as were students who received their first choice.

To further the understanding of the student's choice, the following conclusions are derived from the results of the interviews:

(1) Students generally chose the instrument with which they were most familiar.

(2) The choice was rarely based on a knowledge of the method of playing an instrument although this was a common complaint about the instrument assigned.

(3) The majority of students entering MELAB did not have a choice which had been fixed in advance.

(4) Student choice did not remain consistent after six months of training.

3. RECOMMENDATIONS

Certainly no complete answer to the problem--To what extent should student preference be considered in the assignment of instruments? --can be derived from the results of the present investigation. There are, however, implications arising from the findings of this study which have resulted in three recommendations.

The first recommendation derives from the fact revealed in the interviews (Part II) that students generally have no sound basis for their instrument preferences. If these preferences are to serve any useful purpose in the assignment of instruments, they must be based upon a minimum knowledge and understanding of the instruments. It is recommended, therefore, that greater effort be made to ensure that students are prepared to participate in the assignment of instruments. This could best be achieved by a pre-assignment period during which the students might be familiarized with the instruments and be given the opportunity to play each of them. Such a procedure might result in a greater variety of choice which would give a better balance of the chosen instrumentation. If this were realized, there would be less necessity of assigning instruments other than those preferred.

The second recommendation stems from the studies reviewed in Chapter II that tested the relationship between certain physical characteristics and achievement on specific instruments. These

studies were unanimous in finding that there is no significant relationship between these variables. Unfortunately, many music education textbooks have ignored the results of this research and continue to recommend a list of necessary physical requirements that have been invalidated. This has resulted in an unwarranted emphasis of physical characteristics in the assignment of instruments. It is recommended, therefore, that there should be a de-emphasis of the examination of physical characteristics for assignment purposes. If, as was suggested in the first recommendation, the students were allowed to play each instrument in the pre-assignment instruction period, it would then be possible to set up an observation schedule whereby the teacher could closely watch and evaluate the efforts of each student to play each instrument. Such a procedure could replace the cursory physical examination as the means of determining instrument adaptability.

The third recommendation is based on the findings of Part I where it was revealed that students who were not assigned one of their choices and had no previous musical training had a significantly lower mean restricted persistence than students with previous training. The third recommendation is, therefore, that students with no previous training should whenever possible be assigned instruments of their choice. Since a preponderance of early dropouts appear to come from this subcategory (category C with no previous training), the number of students who withdraw from the program very early in their training

might in this way be reduced.

4. SUGGESTIONS FOR FURTHER RESEARCH

Since the interpretation of ex post facto research is limited by the fact that randomization is impossible, it is suggested that an experimental study be designed to test the results of the present study. Although persistence over a long period would be an impractical criterion in an experimental situation, alternative criteria such as interest and achievement could be used indirectly to project expected persistence. These criteria could also be used directly to determine their relationship to assignment category.

The relationships that were found between the chosen and assigned instruments and persistence were unexpected. The review of the literature and research had not revealed any suggestions that the instrument a student chose could predict his persistence. This finding is peripheral to the main problem of the present study, but it is certainly worthy of future investigation. Perhaps the student's choice is indicative of his environment and it is actually the invironment that affects the student's persistence. It is evident that further research is necessary to suggest an explanation for this unexpected relationship.

The results of this study showed that previous musical training may be an important factor in student persistence. In the

present study, previous training was defined in years of lessons on a musical instrument. This does not take into account the tremendous difference in the worth of the lessons or the learning capacity of the pupils. An improvement for future research in this area would be the use of a standardized achievement test which could accurately measure the results of previous training. Such a study should test the influence of previous training both independently and in conjunction with assignment categories.

One of the recommendations in the present study is the instigation of a pre-assignment period of instruction. This would appear to offer a solution to criticisms of both the student's and the teacher's choice of instruments. This type of preliminary tryout and training has been suggested previously in both the literature and research, but no research was found which showed the empirical results of pre-assignment instruction. This is a very practical area which requires further investigation.

REFERENCES

Andrews, F. M., & Leeder, A. L. Guiding junior-high-school pupils in music experiences. Englewood Cliffs, N. J.: Prentice-Hall, 1953.

Bergan, H. L. A study of drop-outs in instrumental music in five selected schools in Michigan. Unpublished doctoral dissertation, Michigan State Univ., 1957. (Dissertation Abstracts, 1958, 18, 114)

Casey, G. J. A study of instrumental music drop-outs of the Moline (Illinois) schools. Unpublished doctoral dissertation, Colorado State College, 1964. (Dissertation Abstracts, 1965, 25, 5317)

Coy, R. V. An experimental investigation of factors in children's selection of and adaptation to four orchestral instruments. Unpublished doctoral dissertation, Univ. of California, Los Angeles, 1966. (Dissertation Abstracts, 1966, 26, 5471)

Division of Educational Research Services, University of Alberta. Program documentation 360/67. Edmonton: Author, 1969.

Gowan, J. C., & Seagoe, M. The relation between interest and aptitude tests in art and music. California Journal of Educational Research, 1957, 8 (1), 43-45.

Heller, A. J. A study of the problem of drop-outs in instrumental music. Unpublished master's thesis, Univ. of Michigan, Ann Arbor, 1954.

Hindsley, M. H. School band and orchestra administration. New York: Boosey and Hawkes, 1940.

Hoffer, C. R. Teaching music in the secondary schools. Belmont, Cal.: Wadsworth, 1964.

House, R. W. Instrumental music for today's schools. Englewood Cliffs, N. J.: Prentice-Hall, 1965.

Jensen, F. D. A study of the relationship between personality test scores of dropouts and non-dropouts in junior and senior high school music students. Unpublished master's thesis, Univ. of Alberta, 1970.

Kerlinger, F. N. Foundations of behavioral Research. Toronto: Holt, Rinehart, and Winston, 1964.

Kinnison, J. E. A study of the reasons for the high mortality rate of beginning instrumentalists. Unpublished master's thesis, Illinois Wesleyan Univ., 1951.

Kruth, E. C. Student drop-out in instrumental music in the secondary schools of Oakland, California. Unpublished doctoral dissertation, Stanford University, 1964. (Dissertation Abstracts, 1965, 25, 5633)

Kuhn, W. E. Instrumental music: principles and methods of instruction. Boston: Allyn and Bacon, 1962.

Lamp, C. J. The determination of aptitude for specific musical instruments. Unpublished doctoral dissertation, Univ. of California at Berkeley, 1933.

Lamp, C. J., & Keys, N. Can aptitude for specific musical instruments be predicted? Journal of Educational Psychology, 1935, 26, 587-96.

Manor, H. C. A study in prognosis: the guidance value of selected measures of musical aptitude, intelligence, persistence, and achievement in tonette and adaptation classes for prospective instrumental students. Journal of Educational Psychology, 1950, 41, 31-50.

Markarian, J. J. A survey on the motivation of instrumental study in the schools of Massachusetts. Unpublished master's thesis, Boston Univ., 1951.

Martignetti, A. J. Causes of elementary instrumental music dropouts. Journal of Research in Music Education, 1965, 13, 177-83.

Miller, G. E. Loss of students in beginning bands in the Missoula schools. Unpublished master's thesis, Montana State Univ., 1949.

Nagro, C. F. An analysis of certain factors relative to the promotion of interest in the study of musical instruments. Unpublished doctoral dissertation, Chicago Musical Col., 1954.

Norman, T. F. Instrumental music in the public schools. Bryn Mawr, Pen.: Oliver Ditson, 1939.

Pence, D. P. A study to determine the optimum grade for beginning class study of wind instruments. Unpublished master's thesis, Univ. of Kansas, 1942.

Pinkerton, F. W. Talent tests and there application to the public school instrumental music program. Journal of Research in Music Education, 1963, 11, 75-79.

Prescott, G. R., & Chidester, L. W. Getting results with school bands. New York: Carl Fischer, 1938.

Pruitt, J. S. A study of withdrawals from the beginning instrumental music programs of selected schools in the school district of Greenville County, South Carolina. Unpublished doctoral dissertation, New York Univ., 1966. (Dissertation Abstracts, 1966, 27, 1075A)

Rhoades, F. L. An evaluation of measures for the prediction of success in instrumental music study. Unpublished master's thesis, Univ. of Washington, 1938.

Righter, C. B. Teaching instrumental music. New York: Carl Fischer, 1959.

Schmitz, S. M. An investigation of the prognostic value of the revised Seashore tests and the Kwalwasser-Ruch test of musical accomplishment for academic success in a music education program. Unpublished doctoral dissertation, Northwestern Univ., 1956. (Dissertation Abstracts, 1957, 17, 3042)

Schneider, E. H., & Cady, H. L. Evaluation and synthesis of research studies related to music education. Research Project, Ohio State Univ., 1965.

Schweizer, E. E. An investigation of the reasons for and rates of withdrawal among instrumental music students in selected secondary school performance groups. Unpublished master's thesis, Ohio State Univ., 1951.

Seashore, C. E. Psychology of music. New York: McGraw-Hill, 1938.

Smith, A. A. MELAB--an application of inquiry to the training of music teachers. Education, vol. 6, pp. 81-86. Toronto: W. J. Gage, 1966.

Stanton, H. M., & Koerth, W. Musical capacity measures of children repeated after musical training. Univ. of Iowa Studies: series of aims and progress of research, 1933, 42, new serial no. 259. (Psychological Abstracts, 1934, 8, 1258)

Tate, E. C. A study to determine the factors that influence the drop outs in the instrumental music program in selected elementary schools in Omaha, Nebraska. Unpublished doctoral dissertation, Univ. of Nebraska Teachers Col., 1962. (Dissertation Abstracts, 1963, 23, 3746)

Ward, S. D. The instrumental director's handbook. Chicago: Rubank, 1940.

Webster, J. B. A study of children's reasons for choice of instrument. Unpublished master's thesis, Univ. of Kansas, 1955.

West, O. L. Guidance in the selection of a musical instrument. Unpublished master's thesis, Illinois Wesleyan Univ., 1954.

Wolfle, E. E. Relationships between selected factors and participation and non-participation in instrumental music in the Cincinnati public schools. Unpublished doctoral dissertation, Indiana Univ., 1969. (Dissertation Abstracts, 1969, 30, 2565A)

Wolner, M., & Pyle, W. H. An experiment in individual training of pitch deficient children. Journal of Educational Psychology, 1933, 24, 602-608.

Wyatt, R. F. Improvability of pitch discrimination. Psychological Monographs, 1945, 58 (2), whole number 267.

APPENDIX A

MELAB APPLICATION FORM

UNIVERSITY OF ALBERTA

Department of Secondary Education

MUSIC EDUCATION LABORATORY

Your child has asked to be considered for membership in one of the grade VII beginning music classes being recruited by the University of Alberta for its program in teacher education. This is the eighth year that this instruction has been offered and the organizations being recruited at this time are a beginning band and a beginning orchestra. As the parent of a potential MELAB musician, you will be interested in certain facts about the program.

1. Although the main purpose of the program is to train teachers rather than to provide a public service, many advantages are enjoyed by the young people chosen for membership.

2. All equipment will be loaned to band and orchestra members free of charge during the first year of their membership. Beginners who graduate to a higher band or orchestra must own their own instruments.

3. Although the preference of each child is considered when assigning him to an instrument or an organization, in each case the final decision rests with the program officials.

4. Instruction will be given by music-teachers-in-training under the guidance of professors of the University of Alberta and other master music teachers.

5. The program in band and orchestra instruments is for beginners. Indeed, where the applicant shows evidence of unusual talent and interest even previous musical experience is not essential. However, since the fulfillment of the obligations of membership will require much time and effort, applicants must be willing to make this their principal out-of-school activity and should be generally competent in their school work.

6. A registration fee of $20.00 is levied at the beginning of the first year of a member's participation in the program (NOTE: do not send the fee with this questionnaire.)

7. Home study assignments must be faithfully completed. These will require 45 minutes each day in addition to regular rehearsal attendance and will be examined from time to time in vive voce and other examinations.

8. Punctual and regular attendance at all rehearsals is obligatory. Rehearsals are held every Saturday from 9:00 a.m. to noon, and every Wednesday from 5:00 to 7:00 p.m.

Selection for membership will be based partly on the results of a preliminary interview and testing program to take place during the next two weeks. If you wish to arrange for your child to be included in this testing program please complete and return the attached questionnaire to Professor Alan A. Smith, Music Education Laboratory, Faculty of Education, University of Alberta, Edmonton. It should be received by MELAB before September 22. You will be informed of the time and place for your child's tests.

University of Alberta
Department of Secondary Education

APPLICATION FOR MUSIC EDUCATION LABORATORY MEMBERSHIP

A. Application made for ______________________________ boy/girl
(prospective member's name)

______________________________ (address) ______________ (phone)

by Mr.
Mrs. ______________________________
(parent's or guardian's name)

______________________________ (address) ______________ (phone)

B. Information About Prospective MELAB Musician

1. Age ______________ 2. Present School Grade ______________

3. School ______________________ School Phone ______________

4. Principal's Name ______________________________

5. Home Room Teacher's Name ______________________________

6. Home Room Teacher's Phone Number ______________________________

C. Prospective Member's Past Musical Experience

1. Music study with a private teacher. (Give details: instrument, how long, private teacher's name, etc.)

____

____

____

2. Examinations with the Royal Conservatory, Western Board of Music, or other school of music. (Give details: instrument, grade, date, etc.)

____

____

3. Is your child self-taught on any instrument? (Give details)

____

____

____

4. Comment on your child's general attitude towards music.

5. Has your child any known infirmities which might limit his ability to play certain instruments. (asthma, heart trouble, nervous disorders, missing fingers, etc.)

D. Present Extra-Curricular Demands on the Applicant's Time

1. Part-time work (paper route, delivery, etc., give details).

2. Chores around the home (Give details if they are unalterable).

3. Present music lessons and practice required.

4. Memberships (boy scouts, girl guides, C.G.I.T., etc. Give details including times of meetings, special responsibilities, etc.).

5. Other

6. MELAB membership will demand 5 hours weekly attendance at rehearsals and about 3½ hours of home practice each week. Do you feel that your child can fit this into his present schedule?

____

____

If not, what adjustments would be made if your child were accepted for membership in the Music Education Laboratory?

____

____

E. Information About Home and Family

1. Mother's musical background ________________________

____

2. Father's musical background ________________________

____

3. Other children in the home: older boys ________ younger boys ________

older girls ________ younger boys ________

4. Can you provide a regular time and place for daily uninterrrupted practice or study?

____

____

5. Is there a piano in the home? ________ Other instruments? ________

____

6. If your child is accepted, would you assume responsibility for:

(a) His punctual and regular attendance at rehearsals (yes - no)

(b) The condition and, if necessary, competent repair of the equipment loaned to him (yes - no)

(c) His faithful completion of home practice and other assignments (yes - no)

AAS/jcw
9/10/68

APPENDIX B

MELAB INTERVIEW FORM

UNIVERSITY OF ALBERTA

Department of Secondary Education

MUSIC EDUCATION LABORATORY INTERVIEW FORM

Applicant ______________________________ boy/girl ________
last name first other

Address ______________________________ Phone ____________

Interviewer ______________________________

A. Test Results

Seashore: pitch ________ tonal memory ________ time ________

rhythm ________ timbre ________ intensity ________

Drake: rhythm ____________ tonal memory ____________

Rarnum ____________ I.Q. ____________ Other ____________

B. Physical Examination

1. Height ______________ 2. Weight ______________

3. Right Arm Length ______________ 4. Build: L M S

5. Hands and Fingers:

   (a) left hand span ______________

   (b) hand build (strong/delicate) ______________

   (c) fingertips (pointed/square, fleshy/bony) ______________

   (d) missing fingers and joints ______________

6. Lips

   (a) thin/normal/thick/flabby ______________

   (b) seen abnormalities (pendulous lower lip, drooping upper lip, upper lip flap, hairlip, etc.)

   ____

   (c) ask about chronic chapped lips, coldsores, split lips, etc.

   ____

7. Jaw

(a) structure: (square/pointed, heavy/light) ____________________

(b) occlusion: (exact, very underslung lower jaw, lantern jaw)

____

8. Teeth

(a) missing teeth (front/side, top/bottom) ____________________

(b) regularity (extent, front/side, top/bottom) ____________________

____

9. General Health

(a) vision (glasses?, near/far, etc.) ____________________

(b) heart trouble ____________________

(c) asthma or other respiratory trouble ____________________

(d) nervous disorders ____________________

(e) bad speech impediment ____________________

(f) other ____________________

C. Family Position

(On the following chart, indicate applicant with a square, circle others)

oldest	B	B	B	B	B	B	B	B	B	B	B	B	youngest
	G	G	G	G	G	G	G	G	G	G	G	G	

D. Instrument Preference

1. Applicant prefers (circle preferred group) band strings

2. Three preferences in the preferred group (indicate strength of preference)

(a) ______________ ____________________

(b) ______________ ____________________

(c) ______________ ____________________

3. One instrument in less preferred group ____________________

E. General Discussion with Applicant

Hobbies and sports ____

____

Attitude to school work, teachers, homework, favorite and least liked subjects.

____

____

Attitude of applicant and his parents to his joining the laboratory.

____

____

Attitude to music: tastes, past experiences, etc.

____

Other matters ____

____

____

____

F. Personality Assessment

aggressive	1	2	3	4	5	6	7	submissive
agitated	1	2	3	4	5	6	7	calm
courteous	1	2	3	4	5	6	7	impolite
precise	1	2	3	4	5	6	7	vague
humourous	1	2	3	4	5	6	7	serious
delicate	1	2	3	4	5	6	7	rugged
interested	1	2	3	4	5	6	7	bored
intimate	1	2	3	4	5	6	7	remote
active	1	2	3	4	5	6	7	passive

APPENDIX C

INTERVIEW SCHEDULE

NAME:____________________ SEX: M F ORGANIZATION_________

CHOICES: 1.____________ 2.____________ 3.________________

RECEIVED: ______________ ASSIGNMENT CATEGORY: A B C

INTERVIEW SCHEDULE

(1) Before entering MELAB, how familiar were you with the orchestral instruments?

(not) 1 2 3 4 5 (very)

Comment:

(2) Do you think that you had an adequate enough understanding of the instruments to make an intelligent choice?

yes no

Comment:

(3) Before you came to MELAB, had you any ideas about what instrument you wanted to learn to play?

Comment:

(4) What made you decide to choose the__________as your first choice?

Comment:

(5) Are (were) you happy playing the______________(instrument received)?

yes no

Comment

(6) What do you like most about the______________?

Comment:

(7) Are you interested in continuing to study the______________?

yes no

Comment:

(8) What do you dislike most about the______________?

Comment:

(9) What would now be your first choice of instruments?

____

1 2 3 Other

Received? : yes no

B29980